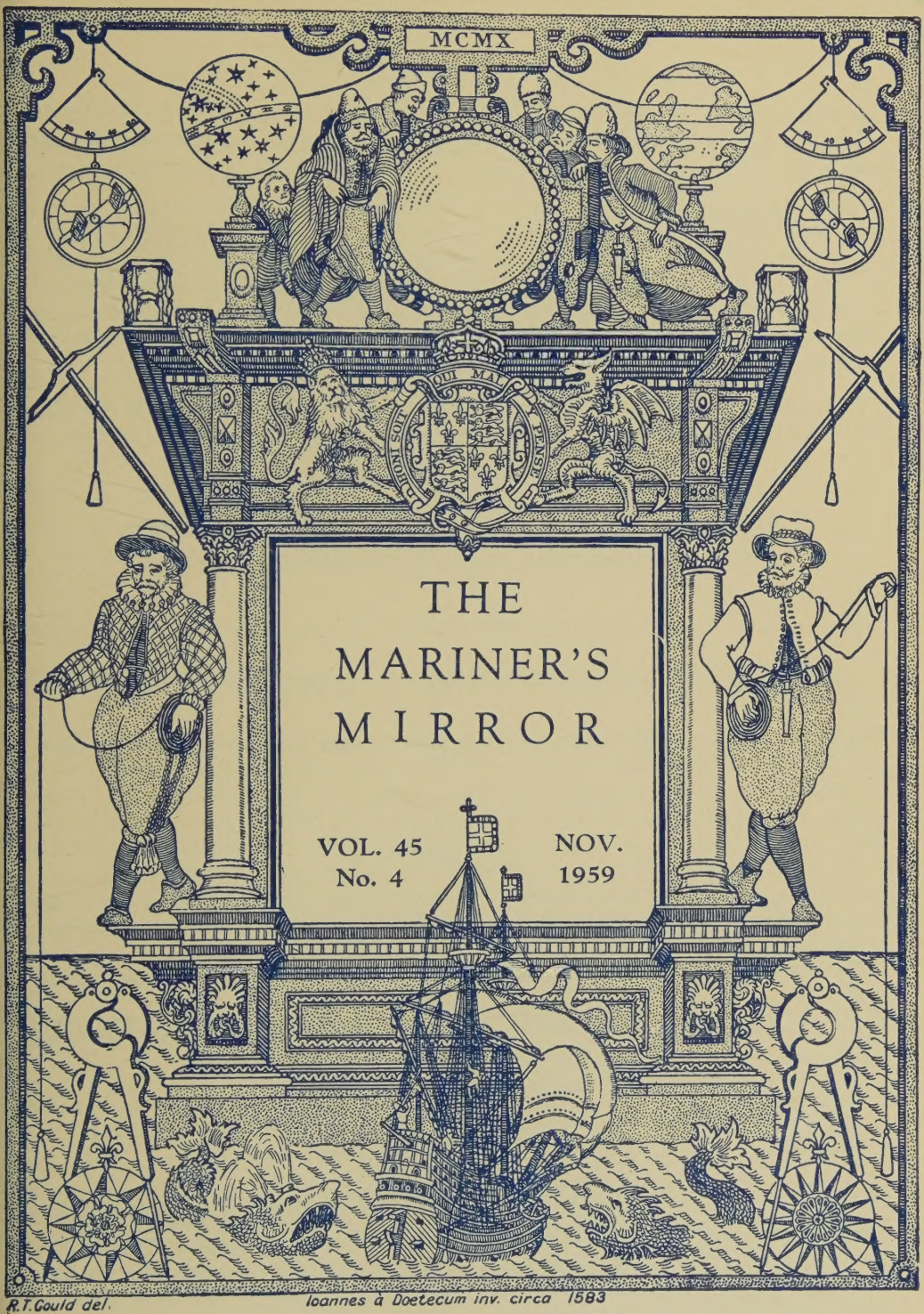
THE QUARTERLY JOURNAL *of the* SOCIETY FOR NAUTICAL RESEARCH



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To encourage research into nautical antiquities, into matters relating to seafaring and shipbuilding in all ages and among all nations, into the language and customs of the sea, and into other subjects of nautical interest.

The Society has erected a Monument to the Van de Veldes in St James's, Piccadilly, London; raised £107,000 to save Nelson's Flagship and has superintended the restoration of H.M.S. *VICTORY* to her appearance as at the Battle of Trafalgar; paved the way to the establishment of the National Maritime Museum at Greenwich and the *Victory* Museum at Portsmouth; organized exhibitions of Nelson relics and naval prints, etc.; and issued a number of periodical publications dealing with nautical archaeology, besides an inexpensive set of official plans (ten in number) for building a model of H.M.S. *Victory*.

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For particulars of membership apply to

THE HON. SECRETARY, SOCIETY FOR NAUTICAL RESEARCH,
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The aim of the Society being to arrive at true conclusions through free discussion, it is distinctly to be understood that the Editor is not held responsible for statements made in the *Journal*.

Contributions and correspondence should be addressed to G. R. G. Worcester, Esq., *Penny Cottage, Pound Lane, Windlesham, Surrey*. All articles, notes, queries, answers and reviews of books should be typed, on one side of the paper, preferably quarto, with double-spacing and with a wide margin. The name and address of the author must be given on the last page. As a general rule, the length of an article should not exceed 10,000 words and, owing to the high costs of production, photographs and line drawings to illustrate contributions must be restricted to a minimum.

Names of ships should be underlined to denote *italics*, and not written within inverted commas.

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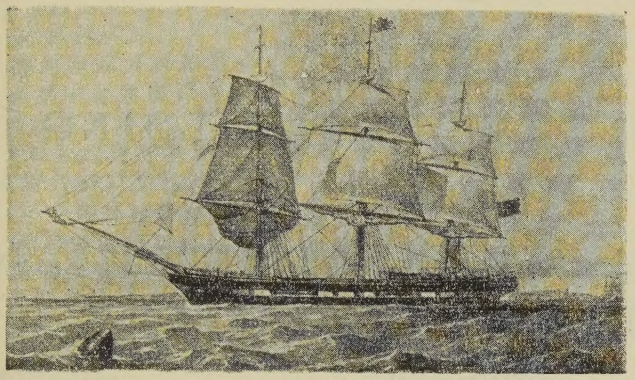

The Blackwaller *Windsor Castle* leaving Bombay 1859

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after the manner of their use in all ages and among all Nations

VOL. 45. NO. 4 1959

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EDITORIAL NOTES

THE TRESCO 'VALHALLA'

The following appeal signed by the President of our Society has been widely circulated and is now repeated here:

A collection of figureheads and other relics of ships wrecked on the Isles of Scilly is preserved in the famous subtropical gardens of Tresco Abbey, where it is known as the Tresco 'Valhalla'. It has been brought together by successive generations of the Dorrien Smith family since they became tenants of the Duchy of Cornwall in 1835. Collected along one of the most deadly coasts of the British Isles, the relics represent some forty shipwrecks from the 18th century to the 20th. As a collection they provide a unique and moving record of tragedy at sea, besides valuable material for historical study by the nautical archaeologist.

The Council of the Society for Nautical Research is satisfied that this is a collection of national importance, and has examined the problem of its restoration and preservation, which is outside the capacity of local resources. No expert attention had been devoted to this problem until 1957, when a team of skilled repairers were put to work by Lieut.-Commander T. M. Dorrien Smith, R.N. (ret.), with technical advice from the Ministry of Works and the National Maritime Museum.

The total cost of this non-recurrent restoration work and of the protective re-housing of the exhibits is estimated at £4300. Towards this capital expenditure generous grants, amounting in all to about £2650, have been made by the Ministry of Works, the Carnegie United Kingdom Trust, the Gulbenkian Foundation, and the Duchy of Cornwall.

To bridge the gap between the estimated cost and the funds available, and to provide a small reserve for future preservation work, the Society for Nautical Research is raising a fund of £2000, to be held in trust by the Society. I write to invite your interest in this worthy cause, and to ask if you will be good enough to make a contribution to the Tresco 'Valhalla' Fund.

I would add that arrangements have been agreed between Lieut.-Commander Dorrien Smith and the Duchy of Cornwall to secure the future of the collection in the event of the present tenancy being terminated.

Readers wishing to help are asked to send their contributions to the Hon. Treasurer of the Society at The National Maritime Museum, London, S.E. 10.

CHRISTMAS CARD

The National Maritime Museum is producing for this year's Christmas Card a recently acquired small painting by Thomas Somerscales. The picture shows a barque in a fresh breeze with a following sea. The composition and tone of the painting make an attractive and colourful Card.

Somerscales is well-known for his painting 'Off Valparaiso', also exhibited in the Museum, to which it has been lent by the Tate Gallery.

The cost of the Cards is 13*s.* per dozen (post free), and orders with remittances should be addressed to:

H.M. Stationery Office,
P.O. Box No. 569,
London, S.E. 1

LIST OF ENGLISH MEN-OF-WAR, 1509–1649

This pamphlet, compiled by Dr R. C. Anderson, is now on sale. Copies can be obtained on application to the Secretary, Society for Nautical Research, price 3*s.* 6*d.* (postage 4*d.*)

G. R. G. WORCESTER

OBITUARIES

ADMIRAL SIR GEORGE HOPE, MR R. MORTON NANCE, SIR ALAN MOORE AND MR LAURENCE PRITCHARD

At the beginning of the Annual General Meeting held on 15 July the President spoke as follows:

Within the last few weeks we have lost three of our most outstanding members. Mr Morton Nance died on 27 May, Sir Alan Moore on 13 June and Sir George Hope only a few days ago, on 11 July.

Sir George, as you all know, was our President from 1936 to 1951 and had been Chairman and to all intents Acting President for eleven years before that. There is no need to speak about his distinguished career as a Naval Officer, but I must say something about his work for our Society. When we invited Lord Beatty to become our President in 1925, he asked us to appoint a Chairman who would—to put it bluntly—do the work for him. Sir George was then Admiral President of the Royal Naval College and it may be that Professor Callender had a good deal to do with the choice we made; but, whether the credit should go to him or to Lord Beatty, it is certain that we could not have done better. For twenty-six years Sir George presided at our meetings with unfailing regularity and guided us wisely in many important decisions; while for nearly all that time he was also one of the Trustees of the National Maritime Museum and so helped to form and maintain the close relationship between the Museum and the Society which has been so valuable to both. He was a very good President, a very good colleague and an exceptionally nice man.

Morton Nance and Alan Moore were both in a way more than original members, because it was the bringing together of Nance and Laughton with Moore as an intermediary that led to the

foundation of our Society. How that came about can be read in Moore's own words in *The Mariner's Mirror* for 1955. No doubt some kind of association of those interested in nautical antiquities would have come sooner or later, but it would not have come so soon or started so successfully without these two men and—don't let us forget—Laughton.

Even if they had been mere 'sleeping partners' we should owe them a great deal, but they were nothing of the sort. Moore wrote in the very first issue of *The Mariner's Mirror* and Nance in the next, and though their contributions became less frequent as time went on, they both continued to write at intervals for more than forty years. Another thing we owe to Moore: he aroused or stimulated Brindley's interest in the development of ships and we know how much resulted from that.

Nance's great asset was the fact that as a young man he had made a very extensive collection of drawings from all sorts of contemporary representations of ships and could redraw these in pen-and-ink for reproduction. His sketch-books are coming to the Museum and it may well be that they still contain valuable unpublished material, as happened in Laughton's case. His only printed book on nautical matters was *Sailing Ship Models*, published in 1924 and reissued in 1949, decidedly the best book on the subject. He also produced a remarkable series of models of killicks and primitive anchors arranged to show the course of their development.

Moore published two books, *Last Days of Mast and Sail* in 1925 and *Sailing Ships of War, 1800–60* in the following year. The first, based mainly on his own observation while serving as Temporary Surgeon R.N. in the war of 1914, will always remain a valuable record of a sad stage in the history of shipping in many countries; it was illustrated by Nance. The second was a 'picture book' with its plates taken from the Macpherson Collection, but the choice of prints, the notes on them and the introductory text put this volume in a very high place among such compilations.

We had hoped to recognize Moore's work for nautical archaeology and for our Society by adding his name to the list of our Honorary Vice-Presidents. His death has made that impossible and what was to have been a short speech of recommendation has had to become part of a combined obituary. Our members will, I know, be as sorry as I am that this should have happened.

I must mention another very recent death for personal reasons. It is that of Mr Laurence Pritchard, who was associated with me in model work for many years. Trained as a ship's draughtsman and coming to me first as a rigger, he proved to be so good a wood-worker that I asked him to undertake the actual building of the *Mayflower* model for which the credit is often given to me. After that he made a particularly fine model of the third rate in Deane's manuscript of 1670, first having to translate the slightly distorted photographs of the plans into real working drawings. Finally, when I was making a *Santa Maria* and another of our members, Mr Crone, a *Half Moon*, he repeated the *Mayflower* on a smaller scale for the same American collection. Another thing he did, perhaps more important, was to produce a complete rigging-plan of the *St George* model, when it and the rest of the Sergison models were snatched away to America with only 3 days' notice. A small drawing by him has been used on the title-page of our last 10 volumes and forms a good memorial.

R. C. ANDERSON

THE SWANSEA FISHERY (1775)

By R. J. H. Lloyd

UNTIL late in the eighteenth century, ships entering the port of Swansea to load or discharge their cargoes at the wharves and quays along the Strand, had to navigate a narrow channel up the estuary of the river Tawe. It was obstructed by a bar and was sometimes so shallow that vessels of even moderate tonnage found the passage difficult and dangerous.

An increase in trade and in local shipbuilding and repairing, hastened the need for a better harbour and created a wider interest in the growing importance of the port. In 1768 a number of public-spirited men living in the neighbourhood started a movement for the improvement of the harbour which twenty-three years later resulted in the Swansea Harbour Act of 1791.[1]

This brief reference to the history of the port of Swansea in the eighteenth century is sufficient to indicate the main factors which stimulated every sort of maritime activity in the locality at that time. Sea fishing had never been a particularly popular occupation at Swansea, nor a very prosperous one, but this, too, was revived and about the year 1774 a small private fishing company was formed called the Beaufort Society.

The Society had not been in existence very long before it became known that several gentlemen who were not members, were willing to promote a fishery at Swansea if it was open to public subscription and to management by the subscribers, or a committee appointed by them. This proposal seems to have appealed to the members of the Society who decided that the fishery which they had begun should, in future, be open to public subscription and management and that their skiffs should be lent to the subscribers 'upon the usual terms'.

Twenty Articles for the new Company were drawn up and these described in some detail its aims and how it was to be administered.

It was to be called 'The Swansea Fishery' and its capital was to consist of 'at least one hundred shares of an annual subscription of one guinea per share for three years'.

The President was to be nominated at the first general meeting and to remain in office for three years. He would have the power to appoint the

1 W. H. Jones, *History of the Port of Swansea* (Carmarthen, 1922).

Vice-President for a similar period. Richard Jones, a merchant of Swansea, was nominated the first Treasurer and was allowed £10 per annum to pay a clerk whom he was to appoint. Subsequently the Treasurer was to be elected annually.

The management of the Company was to be conducted by a committee consisting of the officers and four shareholders. The shareholders were to be nominated annually and only those who possessed at least two shares were eligible.

Articles XVII–XX dealt with the price it was hoped to obtain for fish and the benefits to which the shareholders would be entitled:

XVII. That the general standard for the prices of Fish, as at present intended to be established by the Company, be as follows; and the prices, to be hereafter fixed, the Committee shall endeavour to keep within the following limits (viz.):

Turbot, from	3*d.* to 6*d.* per lb.
Brit and sole	2*d.* to 4*d.*
Other flat fish	1*d.* to 3*d.*
Salmon	1*d.* to 4*d.*
Other round fish	1*d.* to 3*d.*
Oysters	6*d.* to 8*d.* per hundred

XVIII. That the Proprietors shall be entitled to the right of pre-emption of all the Fish caught under this establishment for their own use at the prices to be weekly fixed by the Committee; and if the prices fixed shall at any time necessarily exceed the above limits as high as 1*d.* per lb. an abatement shall then be made of 1*d.* per lb. to each Proprietor purchasing Fish, till such Proprietor shall have received as much by these abatements during the course of the year, as his annual subscription amounts to.

XIX. That the Committee shall use the utmost impartiality in duly accommodating by turns the Proprietors in the manner above directed.

XX. That every time when more than Two Hundred Weight of Fish shall be brought in upon any one day to Swansea by this Fishery, the overplus shall be sent out into the country (provided it be experienced that a sale can there be found for the same) and shall be there first offered to the Proprietors; for which purpose proper carriers shall be hired, who shall take with them a Bill of fixed prices of fish, and the carriage of the same shall be charged at the following rates:

Any distance between Swansea and Pile	½*d.* per lb.
From Swansea to Cowbridge, or to Llandilo	1*d.* per lb.
From Swansea to Cardiff	1½*d.* per lb.
Swansea to Brecon	2*d.* per lb.

The first general meeting of the Company was held in the Falcon Inn at Swansea on 6 March 1775. It was very brief. Thomas Mansel Talbot of Margam was elected the first President and Joseph Pryce, Calvert Richard Jones, John Franklen and Illtyd Thomas were elected to the Committee.

Another meeting was held at the Falcon on 3 April. Much business was discussed and the following decisions were taken:

I. It was agreed that the whole produce upon the sale of every Cargo of Fish shall be divided into Seven Shares, in the following proportion:

To the Proprietors of the Boats and Skiffs in the Fishery	$1\frac{1}{2}$ shares
To the Fishermen employed	$3\frac{1}{2}$
To the Fishery-Company	2
	7 shares

II. The Master and Hands employed, are to find themselves in all provisions, but for the first month's encouragement One Guinea Bounty shall be given to each Hand, and One Guinea and a quarter to the Master: and in the division of the Shares among the Crew, the Master shall be estimated for one share and a quarter.

III. The Skiff called the Free-Mason shall be hired from the Beaufort-Society upon the terms above mentioned of One Share and a Half of the Fish caught: the skiff to proceed the first week in May to the Port of Tenby; application there to be made to Mr Thomas Watkins, desiring his assistance in procuring for the Company such Hands as were employed in the Fishery formerly established at that Port, to whom encouragement shall be offered for their residence and employ at Swansea.

N.B. The Fishery established at Tenby was conducted by a Company formed there about ten years ago, which did not fail of success from any scarcity of Fish upon the Coast, but on the contrary by their engaging to pay the Fishermen according to the quantity by them taken, and the Fish being taken in greater plenty than could be sold in the Country.

IV. The Skiff called the Experiment belonging to the Beaufort-Society shall be hired upon the same terms of sharing the Fish caught, according as the purposes of the Fishery shall require; and to the proposals made for hiring the skiffs it appeared that the Beaufort-Society assented.

V. The number of Hands in each Skiff to be a Master, two men and one boy.

VI. The Trawls and Seines in the possession of the Beaufort-Society to be purchased at an appraised price, with which and with other proper Netting, Lines and Hooks the Skiffs, when employed, shall be provided.

VII. When a sufficient quantity of Fish shall at any time be taken, each skiff is to proceed with the same either to Penclaudd or Swansea, according as the wind shall suit; the Fish brought to Penclaudd to be immediately sent over to Swansea by hired horses or carriages; and in every case all the Fish caught shall be brought to Swansea before the same is sold and forwarded into the Country, unless the same would otherwise spoil, or that the Fish should be caught in more abundance than the demands of Swansea and the Country adjacent will take off.

VIII. The Clerk is to keep an account of all the Proprietors, who shall have been admitted to their pre-emptive right according to the notices of requisition to the Clerk and in the same order as their names stand in the Company's Book; the names to be there inserted, when 100 shares are filled, according to the amount of the Sums subscribed; equal sums in order of time as subscribed; and no Subscription for Shares to be inserted in the Company's Book, till the first annual sum had been paid. No Proprietor to be admitted to the right of Pre-emption of more Fish than for the consumption of his own or one friend's table; and any person discovered to have transgressed this rule shall for the future be debarred his right of Pre-emption.

The fortunes of the Company between April and the beginning of the following August are described in a brief report by the clerk, John Merchant.

the Skiff Free-Mason, having been hir'd from the Beaufort-Society and fitted out with Trawls and Seines purchased from the same Society, agreeable to former resolutions, early in May proceeded to TENBY. Several trials were made for Fish during the run from Swansea there, and when arrived

at that Port two old Fishermen formerly employed in the Tenby-Fishery were hired; with whom and other Hands the Skiff proceded to the Grounds, described as the Fishing banks formerly frequented with so much success; but this time fruitlessly; either that the Grounds were mistaken, or that it was too early in the Season. Before the final departure of the Skiff several attempts were made with the Trawl as low down as the Island of Lundy, but the Fish taken were neither extraordinary in size, nor considerable in quantity.

When the Summer was more advanced an old Fisherman was procured from Brixham in the County of Devon; who proceded to fish in a small boat of his own, and during the stay he could be induced to make on this Coast, some very fine Fish, and particularly Soles of a much larger size than usually caught in the Wears upon the shore, were brought to Market of his catching; and this for some time produced a considerable supply. A Price of Half-a-Crown per Day was offered to the resident seafaring men at Swansea (unemployed in the shipping) to accompany the Brixham-Fisherman, and take marks of the Fishing-Grounds, but none could be prevailed upon; they preferring the idle business of Hobbling and Tide-jobs in the River to any more industrious Calling, especially to Fishing, an employ they have the greatest aversion to.

At an Extraordinary General Meeting on 9 August, Calvert Richard Jones was elected President in place of Thomas Mansel Talbot, who had resigned because he could not attend meetings as often as he considered necessary. Two committee members resigned shortly afterwards for what appear to have been good enough reasons, and were replaced.

Another Extraordinary General Meeting was held on 10 October. Membership of the Committee was now opened to subscribers with only one share and in future the Committee was to meet every Wednesday evening, alternately at the Star and the Falcon Inns. Perhaps there is a suggestion here that all was not well.

During the winter the Company's attention was principally directed towards the oyster fishing and an offer was made to purchase all the oysters that were brought into Swansea during the month of October for 6*d.* per hundred. But at a meeting on 1 November the Committee learnt that, although the offer had been advertised, no oysters had been brought in.

In the meantime a skiff hired by the Company, presumably the *Freemason*, had returned with 5800 oysters which it had taken in two days and 4000 of these had been sold at 8*d.* per hundred.

The Committee was anxious to find a way of disposing of the unsold oysters and the Clerk who had been instructed to make inquiries about the cost of pickling them, reported that this would be, per thousand:

	£	*s.*	*d.*
For opening	0	0	9
Salt, Pepper, &c.	0	1	6
Jars	0	2	6
Oysters at 7*d.* per hundred	0	5	10
Total	£0	10	7

At the same time it appeared upon inquiry, that the average price of pickled Oysters, of which great quantities are sold from this Coast and Pembrokeshire is 20*s.* per 1000.

Encouraged by this information, the Committee decided to pickle all oysters that remained unsold three days after landing.

As long as the skiffs continued to be hired on the agreed terms, the Company could not afford to cut the price for fresh oysters below 8*d.* per hundred, but it was thought that a saving could be effected by purchasing a skiff and that this would make it possible to sell the oysters for less.

An agreement was immediately entered into with the Beaufort Society to purchase the skiff *Freemason* with all her gear and dredges for eighty guineas, which was 'considerably under prime cost, and the whole not much the worse for wear'. In future oysters were to be sold for 6*d.* per hundred.

Not only did the Company have difficulty in finding men who were prepared to man its skiffs, but there was also a lack of local fishermen with their own boats who were prepared to sell their catches to the Company at wholesale prices. Something had to be done to improve the position and it was decided to insert the following advertisement in the 'public papers':

A respectable Company being established at Swansea in the County of Glamorgan for the vigorous prosecution of a Fishery, upon that Coast, to encourage Fishermen to come over there and assist in carrying on the said Fishery, Five Guineas will be given to each Fisherman so coming towards house-rent for one twelve month and half-a-guinea a month premium. Craft and nets are already provided for those, who chuse to be employed upon the usual shares of Fish taken; and a constant regular price, considerably greater than the price of fish in most other maritime Counties will be given for all the fish caught by those who shall use their own craft and nets.

Application to be made to Mr Wm. Jones, Merchant at Swansea.

Whether the advertisement was successful, or indeed whether the Company continued much further along its difficult course, it has been impossible to discover, as no more 'proceedings' can be found amongst the *Collection of Broadsides and Other Documents* at the Royal Institution of South Wales, Swansea, from which the foregoing notes have been extracted. Perhaps there were none, or perhaps the remainder were destroyed or are mouldering in some damp cellar or attic in an office in Swansea. An undated list of subscribers which was found with the existing records is not encouraging. It contains the names of twenty-nine subscribers who between them held only fifty-seven shares; a figure far short of the 'at least one hundred shares' required by the Articles.

REDL'S CONES AND THEIR SEQUEL

By Commander Hilary Mead, R.N.

ABOUT a hundred years ago Redl's Cones were considered to be a valuable and efficient system of visual signalling by day in the Royal Navy, and they only went out of use about 1870 when communication by long and short symbols came to be established for good. The trouble with Redl's cones is that they are not represented in any official or semi-official publication, although the early seamanship books do depict other rather primitive methods including sail signals which must have been obsolete by the relevant dates of publication, in 1864, 1867 and so on. A further difficulty is that Mr Redl is almost a nonentity. No inquiry has been able to reveal who he was, where he lived, or even whether he had any names or initials to add to plain 'Mr Redl'.

The cones were four in number, and although exact dimensions are not available, they evidently had equal height and diameter and would therefore appear in profile almost as an equilateral triangle. They were formed of material such as canvas mounted on hoops and painted black. The essential part of their construction was that they were capable of being collapsed so that at a distance nothing was then visible beyond the bare frame. When in use they were arranged vertically above one another, apex down and apex up, the contiguous cones of pairs being base to base. During trials, cones 6 ft. in diameter were used, 15 ft. apart from centre to centre. These were out-size specimens, for the usual dimensions for ships were 5 ft. in diameter, 11 or 12 ft. apart. Others used during trials in a cutter were 2 ft. in diameter, 5 or 6 ft. apart, and at Portsmouth Semaphore Tower, $3\frac{1}{2}$ ft., and 10 ft. apart.

Trials had been in progress in 1848, but they were intensified in the summer and autumn of 1853, the Admiralty having appointed a committee in March 1853 to inquire into their possibilities. The main locality was Ashey Down in the eastern part of the Isle of Wight, 429 ft. above sea-level. This has always been a distinctive site for a navigational aid, a day-mark being set up there in the form of a wooden beacon at the beginning of the eighteenth century, and replaced by a permanent obelisk of stone in 1735, standing to-day and kept brilliantly white-washed. This spot forms a splendid position for signalling to Spithead and Portsmouth, and in 1853 a special mast was erected there for these trials, 90 ft. high. It is amusing to read that when one of the referees went up there in 1853, a horse and fly were hired, presumably from Ryde, via Brading; and that the horse

was taken out of the shafts, harnessed to the halyards and pressed into service to hoist the cones by 'walking them up'.

In the National Maritime Museum there is a printed item entitled *Return to an Order of the Honourable The House of Commons*, 23 March 1854, on Mr Redl's Cone Telegraph (Sc 012). It begins with the experiments carried out at five different coastguard stations in Devon, reported by the officers in charge. It should be said that the cones here were tried mainly against the then existing signals appropriate to a coastguard station, which since about 1800 had been performed with flags (a square red flag, a blue pendant 50 yards in length, and a yellow triangle), together with four black canvas balls, about 3 ft. in diameter. Typical reports from stations were as follows. From the Commissioned Boatman at Mothecombe: 'I flatter myself I have instructed the men at the station to the best of my abilities....Any sharp man is competent in two or three days. I could make six signals out of the general signal book in less time than one with the old coast-guard signals.' The Chief Officer at Hope Cove 'cannot conceive any system more efficient or simple....They might be made available for quick information relative to smuggling.' From the Lieutenant at Bovesand, 'The cones here, five feet in diameter, would be distinguished at 15 miles.' From the Lieutenant at Stonehouse Point, 'they are admirably adapted, being distinctly seen at a far greater distance than a flag.'

The president of the 1853 committee was Captain W. F. Martin, R.N., and the other members were an officer each of the Royal Artillery and the Royal Engineers. The trials at Portsmouth were under the superintendence of Captain A. W. Jerningham, R.N., and Commander F. A. Egerton, R.N., 'a very experienced signal officer'. It was ingenuously stated that these two resided at Southsea, which seems to have been a very convenient arrangement! The Commander-in-Chief, Portsmouth, was to provide four intelligent seamen, and such other assistance as was required.

The committee took a large volume of evidence. Sir Houston Stewart at the time was a rear-admiral, but just previously he had been Comptroller-General of the Coastguard and he informed the committee that he had wanted a chain of stations with Redl's cones round the coast; between Portsmouth and Devonport, for instance, there was no electric telegraph. There was frustration owing to the cupidity of the landlords and tenants; after he was relieved his successor was not interested, and moreover the coastguardmen themselves thought it would mean more work for them. Stewart added that he was confident the cones would be useful in time of war, and if he ever were fortunate to hoist his flag he would make use of them. Incidentally he finished up as admiral of the fleet. As a lieutenant he had been signal officer to Lord Keith.

From 1833 the semaphore of the Admiralty telegraph had stood on the tower of the Sail Loft and Rigging House in Portsmouth Dockyard; at first it was on Popham's principle, but in 1847 the Admiralty visual telegraph line had been superseded by the electric, and the semaphore was then doubtless replaced by a machine on Pasley's plan, as Pasley's semaphore had been adopted for the navy in 1827. (The tower carrying this semaphore was burnt down in December 1913.) Important witnesses before the committee on the respective merits of the cones and the semaphore were two signalmen belonging to the dockyard semaphore station. John Vanheer had been the chief signalman there for twelve years; William Fenn had been a signalman for sixteen years, many of them served in flagships, and had been at the dockyard station for four years. Experiments were carried out between the dockyard station and Ashey Down; they signalled by semaphore alphabetically; then the same man made the same signal with the cones. It took exactly the same time, 9 min. 5 sec., and this was the signalman's first attempt at using the cones. Sometimes Jerningham and sometimes Egerton was in charge at Ashey Down conducting the experiments from there. The signals never required repeating; and whereas the signal flags at Ashey could not be made out with a 4-ft. Dolland's glass, the cones were made out with a 2-ft. glass, and they could be read through the smoke of a passing steamer. One opinion was that 'flags have no chance with semaphores or cones'. Other trials were made between H.M.S. *Vulcan* in Cowes Roads and the dockyard, when the cones were made out, but not the semaphore. Also, constant communication was kept up between H.M.S. *Blenheim* in Portsmouth Harbour and a cutter off Calshot Castle, both using cones, a distance of eight miles, and across some low-lying ground.

Another important trial was successful across Weymouth Bay, a distance of about seven miles, between the Verne at Portland, and Whitenose (now known as White Nothe), both being about 500 ft. high.

The special committee broke up on 29 October 1853.

As has been said, there are very few instances to be found of Redl's cones in actual use in the Fleet, but fortunately we are indebted for more detailed information to Philip H. Colomb, R.N., perhaps the greatest signal officer of all time. He became very well known for his various inventions and scientific writings, and died as a vice-admiral in 1899. In 1863, when he was a lieutenant, he delivered important lectures at the Royal United Service Institution on Naval and Military Signals. After describing Pasley's semaphore which had come into regular use by then, the lecturer proceeded to deal with Redl's cones, and his remarks are worth repeating at some length. It was 'a beautiful arrangement', and as already stated the

cones originally collapsed into their bases, but Colomb improved on this by mounting the cones on a pole, closing them round it like umbrellas. They were made self-acting by springs, and each was opened by a single line, four lines being required to work the whole. The changes were fifteen in number, and some of them can be seen from the sketch (Fig. 1).

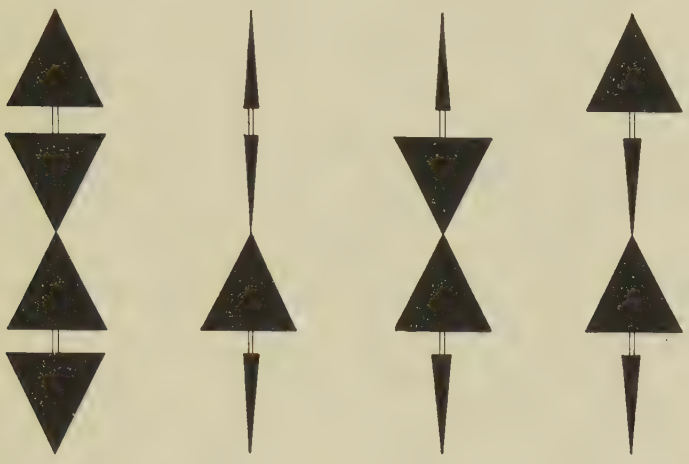


Fig. 1. Redl's Cones.

As an example, to make the signal 478, 'Enemy is advancing with infantry', the preparatory sign would be displayed and answered; then 4, 7, and 8 exposed separately in succession, followed by the 'Stop'. Colomb claimed that twenty-four figures a minute could be achieved. The alphabet was 'extremely good'. 'A' was number 5, and the rest of the letters followed in order after 5. The reason for this was that if 'A' had been number 1, and so on, there would be the ambiguity of 1 with 2 being read as 'A' with 'B', or as nos. 1 and 2 representing 'H' (12).

From the notion of cones or any other objects being considered as closed or open, the thought follows on naturally to things not necessarily being closed and open, but in any other form of direct contrast, such as black and white, right and left (of an arm held up, for instance), the high and low notes of a musical instrument, and so on. Already this had been known by Redl himself as the 'Dual' system, and it had received a good deal of attention in the Report mentioned above.

Colomb made a habit of practising these methods, by using, say, a hat and a stick to represent closed and open respectively. On one occasion in 1859, when the Channel Fleet was at Portland, he went for a walk on the Bill.

He had told the flagship's signalmen to keep a look-out for him. He began with a pocket-handkerchief about a mile away. The flagship did not answer; but another ship did, with her cones. He directed that ship to inform the flagship where he was, which she did, again with her cones. Finally the flagship's signalmen apologized, and by means of his umbrella and handkerchief Colomb gave them a 'sharp rap over the knuckles'.

Although Redl had not set out with the idea of developing his system for flashing purposes there is no doubt that the method of signalling by 'dots and dashes' followed his initiative. The code of Samuel Finley Breese Morse, modified and adapted, which was recognized internationally in 1865, did not make much of an impact in the Services until about 1880 but inevitably in course of time somebody would have thought of adopting the Morse code for all kinds of visual and audible signalling. Redl merely anticipated such developments by several years. As said, the cones were made simply to be displayed *open* or *closed*. For communicating one might take, for instance, the signal for Three, which would consist of the upper and lowest cones closed, and the third open. The system did not cater for fewer than all four being used at once, but in practice it can be worked out that in combinations employing from one to four cones at a time, there would have been thirty possible changes. With this type of signal, however, there was the objection of ambiguity; supposing it were desired to transmit *one open and one shut*, how was the observer to decide whether it was meant to be *one open*, and *one*, *two* or *three shut*? (Say A, U or W; or N, D or B.) Similarly, supposing *open-shut-open* were intended, what was to prevent it being taken for *open-shut-open-shut* (for example, K or C).

With many other forms of contrasting objects, on the other hand, it would be confusing as well as unnecessary to display all four aspects, hence the sending of long and short flashes of light was a plan that very soon commended itself to the inventors. Long before the Morse code had penetrated to the Royal Navy Colomb had formed his own code of short and long flashes, or dots and dashes. The numerals were signalled as one dot for One, up to five dots for Five, then one dash for Six, dot-dash for Seven, dash-dot for Eight, two dots and one dash for Nine, and one dash and two dots for Ten. There were various auxiliary signs, for instance, dot-dash-dash-dot for 'Spelling', which meant that the following numbers referred to letters, such as 5 = A, 17 = M, and so on, which was the only method of spelling, and necessarily very tedious. In point of fact Colomb's code was not meant for conversational sentences, but to be applied to some table or other in the current signal books, such as Compass, Pendants and Horary. As an example, 11.35 p.m. was signalled by Horary (dot-dot-dash-dot) followed by the flashes for 2, 1, 3, 5. This rather clumsy code was quite

successful within narrow limits, and was in force in the Royal Navy as well as the Army from 1862 onwards. A *Manual of Navy Signalling* published in 1886 gives both Colomb's code and the Morse code. Among the contrivances for exposing and closing a light was the shutter arranged on the principle of the Venetian blind whereby a handle was pressed to turn a number of slats edgewise or flat. This apparatus was resuscitated in the 1900's, fitted to the Cruiser Arc-Lamp and known as the 'Scott Shutter', having been filched by Captain Sir Percy Scott and foisted on the navy as his own invention.

In 1862, notwithstanding that the new *Commercial Code of Signals* had been in existence five years, Colomb's code was made applicable to Captain Marryat's famous *Universal Code of Signals* by using Colomb's symbols to denote different sections of Marryat's book. Incidentally, the *Commercial Code* had no system of flashing signals at this date.

The 'dual' system followed another technique in some other navies. Many readers will probably remember the four double electric lamps, white and red, arranged vertically at the masthead or between the masts, in ships of other nations, notably the United States and Italy. In the United States Navy it was known as the 'Ardois' system, where the red lamp was given the value of One, and the white Two. The symbol 'K' would thus be written down as 'W-R-W' or '2-1-2', and for 'H' 'R-R-R-R' or '1-1-1-1'. The Italian Navy had a very similar arrangement, but there it was known as the 'Kaselovsky' system.

SOME NAVAL CHARACTERS I HAVE KNOWN

By Captain A. MacDermott, R.N.

IN my first ship, H.M.S. *Britannia* at Dartmouth, there were no very notable eccentrics among the Officers. The Captain, Noel Digby, an old Baltic and Crimea man, was a model of dignity and correctness in every respect. I never saw him dressed in anything but a frock coat and bow tie except of course for dinner in the evening. This was not unusual among senior officers up to that time, and *no one*, whatever his rank, could be seen outside his own ship in a monkey jacket. Official visits were of course always paid in frock coat, epaulettes and cocked hat.

The *Britannia* had two tenders: the *Wave*, a square-rigged auxiliary barque of 300 tons, and the *Syren*, a pretty little schooner yacht of 45 tons.

The *Wave* was nominally commanded by the First Lieutenant of the *Britannia*, Jock Fraser, a very popular character. She used to make day trips to sea with batches of cadets, and on board her we learnt the rudiments of square-rigged seamanship, and for the most part were very sea-sick. The little ship was also taken to sea periodically by Lieutenant 'Cogs' Rolfe the Navigating Instructor who taught practical navigation and the care and use of nautical instruments. In the *Wave* we also learned the art of stoking furnaces and working the engines.

The *Syren* was only used for recreational purposes on half or whole holidays in the summer months. She was skippered by a pensioner Chief Petty Officer called Penny. He liked to be called 'Captain Penny of the *Syrene*'. Penny was a noted character, a regular old man of the sea, and our authority on all matters connected with sea lore. He was never at a loss for an answer to the most absurd or foolish question. I remember saying to him, 'Ooh! Penny, what's that big black-bird?' 'That 'ere bird', he answered, 'is what we calls a shit 'awk to, and the reason for why we calls 'im a shit 'awk is because 'e chases them gulls, and pursues 'em that is, till sich times as they drops their dung when 'e flies down and eats it.' I later learnt that this bird is the skua, which does indeed chase gulls and force them to disgorge their food, which it catches and devours in mid-air. The skua is also known to trawler men as the 'dung hunter'. From Penny I also learnt the trick of whistling softly through the teeth when at the helm in calm weather, to raise a wind. Sticking a knife in the mast would also bring a wind from somewhere—we hoped. Trolling for mackerel could also

be enjoyed from the *Syren*, and my! were they good when broiled on the spot over the galley fire.

Another popular character in *Britannia* was the sick-bay steward at the Cottage hospital. I do not remember his real name, for to us boys he was always 'Prince', from a rather striking resemblance to the then Prince of Wales—afterwards King Edward VII. He was extremely proud of this likeness and used to entertain us youngsters with a description of how he dressed in Edwardian style when on leave 'in England'.—'Natty well-cut frock coat, and fancy trousers; black silk Jessie worn with slight cant to the port side of the 'ead; gold watch and albert; several silk handkerchiefs scattered about the person delicately perfumed', and so on, and we really believed him. Prince had a particular aversion to marines. During mild epidemics of measles or chicken-pox, he sometimes had one or two marines sent to him as hospital orderlies, and he regarded them all as clumsy flat-footed creatures. 'The huge Marine' he would declaim with infinite scorn, 'is a nimble bird, (comma) he 'oppeth; (semi-colon) from branch to branch.' I forget how the recitation went on but it was heavily charged with scathing satire about the Royal Corps.

The discipline of the cadets was looked after by a Master-at-Arms and four ship's corporals (now known as Regulating Petty Officers). The Master-at-Arms was, for some obscure reason, called the 'Cadet Sergeant Major'. He was a magnificent bearded figure who always wore a frock coat; we had to call him Sir. The corporals were not sirred, and could even be mildly chaffed on occasion. The most feared of these 'Congers' as we called them, was Corporal Angelina Buggins. I never knew his real name. He was a round plump figure with a short closely trimmed black beard and a quick and searching eye that never missed anything. To stand Buggins a drink at the railway station bar, when leaving at the end of term, was considered rather a dashing thing to do. I once asked him what he would have, 'A drop of whisky,' he said. 'Scotch or Irish?' I asked. 'I didn't care if it was French', said Buggins airily; so I made it an Irish.

In a corner of *Britannia*'s cricket field stood 'Stodger's' the ship's tuck-shop, a modest enough looking wooden shack where Ada and Laura, daughters of Stodger the groundsman, sold such delicacies as bun-blackberry and cream, Garibaldi sandwich, Rose and Curley, cups of cocoa, and ice-cream. I can still recall with pleasure the flavour of those thick yellow buns, split open and liberally smeared with blackberry jam and clotted cream. But such a 'many splendoured thing' was priced at twopence, and alas, one did not have twopence very often. My pocket money was one shilling per week.

Dartmouth town was of course out of bounds to cadets; but at the village

of Stoke Fleming some 3 miles away, at the hospitable cottage home of Ma Fox, one could feed sumptuously on bacon and eggs, cornish toughs, seedie cake and of course bowls of Devonshire cream with jam galore, and all at a very moderate cost. Ma Fox and her sister, Ma Martin, had known several generations of cadets, and among her patrons were Prince George, afterwards King George V, and his brother the Duke of Clarence and they greatly prized photographs of the two princes which stood on the parlour chimney piece.

In the *Empress of India*, flagship of Rear-Admiral Edward Seymour, second in command of the Channel Squadron in 1893–4, who was surely one of the Great Gentlemen of the Navy, we had a number of characters among the officers. Robert Bourchier Wrey, the First Lieutenant, was a famous magnifico. His nickname indeed was 'the Duke of North Devon', and he was a law unto himself in matters of uniform as in everything else.

He wore a stiff cap with an almost straight up-and-down peak like a guardsman and tight trousers strapped under his boots. In the Ward Room he took complete charge of everything. He scrapped all the ugly admiralty crockery and replaced it at his own expense by a more elegant dinner service of his own design. Old brandy and port wine of his own choosing were kept for his special use, and so it was with cigars and cigarettes. I remember on one occasion he happened to sit next to an Engineer Officer who, from choice or necessity, smoked Virginia cigarettes of a cheap and common brand. When he lit up after 'The Queen' had been drunk, Wrey raised his well-coloured aristocratic nose and sniffed. 'What cigarettes do you smoke Mr Er—X?' he asked. 'Three steeples, Sir,' replied the Engineer. 'Oh, really?'—then after a short pause, 'would you *mind* holding that cigarette in your other hand?'

Another innovation introduced by Wrey was the taking of snuff after dinner. A magnificent silver-mounted ram's head snuff-box was passed round, and each Priseur took a pinch with a little spoon, laid it delicately along the back of his hand between thumb and fore-finger and snuffed; that is everyone except the parson, who, being rather a common type, was wont to dig his grubby fingers into the box, and snorting loudly, shove about half a teaspoonful of snuff up each nostril with his thumb. This procedure so disgusted No. 1 that eventually he abolished snuffing altogether.

After dinner Wrey retired to his cabin and changed his mess jacket for a magnificent smoking-jacket of crimson silk brocade!

I cannot remember whether No. 1 ever did any work; but every forenoon at 11 o'clock he appeared on the quarter-deck in all his splendour with his silver-mounted and crocodile-skin telescope under his arm; he shot his

cuffs and surveyed the squadron. All was well, and after a few turns up and down the deck, No. 1 went below for his glass of sherry.

I remember one tragic occasion when the fleet was lying in Arosa Bay. Wrey had instructed his tailor in London to send him a new pair of uniform trousers. The parcel arrived by post in due course, but alas when opened was found to be stuffed with straw, the pantaloons had disappeared! This was a major tragedy and almost caused a diplomatic rupture with Spain.

Another rather resplendent figure in the *Empress* was Rosslynn Erskine Wemyss, the senior Watch-keeper, then a two-stripe Lieutenant, but afterwards Admiral of the Fleet, First Sea Lord of the Admiralty and a peer of the realm. He was highly connected, and was a personal friend of the royal family, particularly of Prince George, later King George V.

Wemyss wore a ferocious monocle which gave him a rather arrogant look, and he was the first man I ever saw wearing the now universal double collar; everyone else wore a wing collar, or an all-round choker; none other was uniform. He was officer of the watch when I, with four or five other snotties, joined the ship at Madeira.

The midshipman of the cutter who fetched us from the old Union liner *Mexican* reported to Wemyss, 'Five midshipmen come aboard to join, Sir'. The O.O.W. fixed his eye-glass firmly in his eye, treated us to a short critical stare, and said, 'Poor little devils' and turned on his heel. Among minor oddities of 'Rosie' Wemyss was the wearing of large white shirt cuffs fastened with heart-shaped sleeve links. The sailors liked Wemyss, as indeed everybody did, but laughed at his eccentricities. One Christmas Day, they fashioned a ridiculous effigy of him consisting of a lashed-up hammock, a painted mask, with the top of a milk tin for an eye-glass, and huge white cardboard cuffs with the familiar heart-shaped links. The cream of the joke was that the rogues had borrowed Wemyss's own frock coat and cap for the further adornment of the 'Guy'. This atrocity was furtively pushed on to the quarter-deck during the dinner hour and stood up against the screen, and there remained through afternoon watch (Wemyss's watch). A great deal of latitude for practical jokes was of course allowed on Christmas Day. As a captain Wemyss was known for his straight speaking, and even a touch of arrogance towards some of his superiors, but his officers loved him. One of the stories current about him at that time was then when Reginald McKenna was First Lord of the Admiralty, he offered to Wemyss the post of Private Secretary to the First Lord. The offer was curtly declined. McKenna was naturally piqued by this attitude on the part of a mere captain, and sent for Wemyss—'Do I understand Captain Wemyss that you have refused the appointment of my private secretary?' 'Perfectly,' replied Wemyss, 'I should not think of accepting such a position.'

'Oh, indeed,' said the First Lord. 'And do you realize, Captain Wemyss, that it is in my power to break you?' Wemyss drew himself up, fixed his monocle in his eye and surveyed little McKenna as if he were some curious insect. 'You dirty little lawyer,' he said, 'how dare you speak to me like that? I shall certainly report your insolence to the king.' And out he walked leaving McKenna goggling. How King George V must have enjoyed that story if he ever heard it!

Thomas Young Greet, our Commander in the *Empress*, was a short man with a bristling beard. He was terribly efficient, a tireless worker; he liked to keep all the work of the ship in his own hands down to the smallest detail. He never went ashore. We midshipmen were terrified of him. The only person who had any influence over him was Mr Newman, the Carpenter, a large, corpulent, jolly old fellow, who followed the Commander round the ship, and every time the latter flew into a rage about some trifle would calm him down with a 'Now keep cool, Sir, keep cool', and the old chap simmered down at once. Greet was, by the way, a brother of Ben Greet, the actor. Captain Adolphus St Clair, Flag Captain of the *Empress of India* at this time, was hardly to be called a character, being a quiet gentle-mannered man, but a great Dandy, and was always beautifully turned out. He must have had twenty or thirty pairs of beautifully polished boots ranged in their trees on a long shelf in his cabin. I always regarded them with awe when handing him a signal.

Rear-Admiral Alington was the last of the Flag Officers with whom I served in the *Empress*. He was a man of handsome appearance and dignified bearing, but with a slightly pompous manner, indeed he was commonly known as Pompo Alington. Nevertheless, to all those who served under him he was the kindliest of men. He and his wife frequently entertained us midshipmen to breakfast or dinner in the after cabin. I only saw Alington disconcerted on one occasion. We had a pet bear on board, a large black female bear of uncertain temper called Juneau. Juneau was on perfectly friendly terms with the sailors but disliked anyone in officer's dress. One fine morning the Admiral was walking up and down taking the air on the signal bridge, when Juneau waddled up the ladder to take a look round herself. Alington passed her by without notice. Juneau waited till he passed her a second time, and then evidently thinking that he needed taking down a peg, with one sweep of her mighty paw, she swept both legs from under him and down he came wump! on his west end on the hard deck! No earthquake could have caused a greater commotion! Everybody dashed about telling everybody else what to do, but eventually the great man was rescued and brushed down, physically little the worse. For a time the enormity of Juneau's offence was spoken of in whispers and there

was serious talk of having the old bear shot, but it blew over and Juneau lived on to turn over with the flag to the *Magnificent*.

In my next ship, the *Camperdown*, there were no real characters that I can recall. The Commander, Ian Fraser, was not beloved by any one, and the ship was neither smart nor happy; yet Fraser was not without his foibles. For instance, he dined by himself at a small table, with a pink lampshade, in the Ward Room, with a book propped up before him, and only drank his own particular brand of cognac. This arrangement suited everyone. At Malta his private daighsa painted in the ship's colours and rowed by two elegant Maltese in livery of scarlet and white was one of the ornaments of the Grand Harbour. As Ian was never known to be over extravagant with his own money, evil-minded people who did not like him over much, used to whisper that the daighsa together with other amenities was provided by the Bumboatmen or Canteen Contractor!

In those days, when a ship was commissioned for the Mediterranean station, it was the custom for the various caterers in Valetta to send in tenders for the exclusive right to run the ship's canteen. The conferring of this right rested solely with the executive officer, commander or first lieutenant as the case might be. In addition to the rent agreed upon (which of course went to the canteen funds) there might be certain 'secret clauses' in the agreement which did not appear in writing, by which the contractor agreed to provide the executive officer with a certain quantity of paint and cleaning materials for the embellishment of his ship. As may be imagined the agreement did not always stop there, and an unscrupulous officer might drive a pretty hard bargain.

I don't suppose that this sort of jiggery-pokery would be tolerated nowadays, but in the 1890's, in every Mediterranean port from Gibraltar to Port Said and beyond, all business was conducted in this fashion.

The Chief Engineer of the *Camperdown* (engineers at that time had no executive titles) was an old-timer, who still wore blue braid stripes on the sleeves of his white uniform instead of shoulder straps, and when he had occasion to address the Captain or Commander always took off his cap; he had never learned the modern salute. Many senior officers used to raise their cocked hats rather than salute; and indeed it was a more dignified gesture for a high-ranking officer in full dress.

We always took our caps off when addressing a lady, and if she was a very nice, or important, lady, you tucked your cap under the left arm while speaking to her. In those days leave for sailors to spend a few hours on shore in foreign parts was not nearly so freely given as later on. 'Special leave' was for P.O.'s and men of very good character; but men who had broken their leave or otherwise transgressed were only allowed on shore once

every three months, when all men not actually undergoing punishment had to be given 48 hours general leave by admiralty regulation as soon as opportunity occurred. It was a thoroughly bad system, because all the bad hats who had been cooped up in a ship for three months or more had but one idea in their heads as soon as they stepped on shore, and that was to get drunk as quickly as possible, and to stay that way till brought back on board by the patrol. On one occasion after three months of Levant mopping, we were ordered to Salonika to give 48 hours general leave; but as soon as we had dropped anchor a telegram from the C.-in-C. arrived, cancelling all leave and ordering us to the gulf of Eskanderoon or some such ghastly place.

Naturally a howl of rage went up from the lower deck when the news became known, and half-a-dozen of the real bad eggs managed to slip into the despatch boat and pull for the shore, and were half-way there before they were spotted. A cutter was immediately manned and sent in pursuit; but naturally the cutter's crew were in no hurry, and the fugitives had reached the shore, kicked a hole in the bottom of their boat, and disappeared long before anyone could catch them.

Our Captain was in hospital about this time and Fraser started on an orgy of punishments for everyone whom he considered was in any way responsible for the escape of the delinquents. Petty officers were disrated right and left, and one unfortunate leading signalman who was not even on duty at the time found himself disrated. He managed to have his case brought to the Admiral's notice and a court of inquiry was held which resulted in nearly all Fraser's punishments being cancelled while he himself was superseded and sent home.

In the *Nautilus* brig, my Captain was Lieutenant and Commander Hugh Tothill. I liked him immensely; though he was a man of violent temper and went absolutely purple in the face with rage when anything upset him. On such occasions he would put one finger in his ear, in the manner of a huntsman, and deliver a shattering howl of curses on all and sundry. In the ordinary way he always sang his orders in a sort of Gregorian Chant, and this, by the way, is a very effective way of making one's voice carry. One of our two midshipmen was Wilbraham T. Ford, later a distinguished admiral. He was the midshipman of the mainmast and was responsible for the reefing and furling of the great boom-mainsail. He used to come in for a lot of the skipper's attention.

'Mr Fo-hord!' the skipper would chant from the fo'c'sle.

'Sir-hir?' Ford would reply.

'You're a blood-y foo-hool.'

'Aye, aye—Sir,' and so the conversation would continue, to the delight of the ship's company.

Ford, though champion middle-weight of the services, was one of the most good-natured fellows on earth. In the brigs we always worked and conned the ship from the fo'c'sle head. My station—from which I worked the foremast—was between the fore topmast stays.

On the Australian station at the turn of the century, I was navigator of the *Karrakatta* gunboat. Our chummy ship was the *Boomerang* commanded by Lieutenant Edward M. Hale, an officer of quite exceptional powers of absorption. He was always getting pickled at the wrong time. His father had been bishop of Queensland, and on one occasion we arrived at some port of that colony at the time of the annual Church Congress.

All the clergy of the colony were there, and hearing of Teddy Hale's arrival, swarmed on board to greet the son of their late beloved bishop. Teddy was sozzled as usual, but called for drinks and after insisting on all the Reverend gents drinking a bumper to the memory of his late beloved and Right Reverend father, offered to show his guests round the ship. Arriving on the fo'c'sle he yelled for the bow gun's crew to close up, and gave the order 'Sponge and Load'; the gun being a 4·7 quick-firing the order was quite inappropriate and the sailors seeing the condition of the skipper began playing the fool and throwing things about, till the rammer fell heavily on the bare toe of one of their number who danced around in agony grasping his injured foot, but not daring to say those things usually said on such occasions. At last he could no longer bear the pain in silence, so fixing the Archdeacon with a baleful eye he fired off a couple of epithets of the foulest kind. Teddy having by this time ceased to take any further interest in the proceedings, the conference was taken in charge by No. 1 and sorrowfully ferried ashore.

The *Boomerang* was paid off shortly after this episode and her officers and ship's company took passage to England in an Orient liner.

During the voyage home, a Grand Ball was given in honour of something or other. Teddy had retired to his cabin before the Ball opened; but about midnight when the festivities were at their height, a strange figure clad in gay pyjamas and adorned with a cocked hat and sword appeared in the ballroom and, raising his hand, ordered the music to cease! There was a moment of horrified suspense, before Thresher, the First Lieutenant, and the doctor rushed at Teddy and hustled him down below to his cabin. As far as I know Teddy was never employed again. He came, alas! to a sad end.

At the beginning of the century there was no Australian Navy, but a squadron of the Royal Navy commanded by a Rear-Admiral Commander-in-Chief had its headquarters at Sydney. It consisted of the 7000-ton cruiser *Royal Arthur*, flag ship, and ten or twelve old second-class cruisers,

sloops and gunboats. Among the sloops was H.M.S. *Torch*, a barque-rigged auxiliary of some 900 tons, commanded by Commander MacAlistair, a Scottish Laird, who took his hereditary piper to sea with him in the guise of valet. MacAlistair, it may be mentioned, was very hard of hearing, not to say as deaf as a haddock. One of the hereditary piper's duties was to march up and down the narrow alley-way leading from the quarter-deck to the Captain's quarters and to play the pipes while the Captain dined. Now this alley-way was only separated from the Ward Room by a louvered bulk-head, and the unfortunate officers who dined at the same hour as the Captain could hardly hear themselves eat for the infernal din set up by the piper when he got really going. To Mac himself, of course, this seemed as gentle music wafting from over his native hills. After some months of this torture, a deputation from the Ward Room mess waited on the Captain and asked if some arrangement might be made for the hereditary piper to perform in some other part of the ship. MacAlistair was absolutely dumb-founded by this request; that anybody should be so absolutely lost to all moral and religious feeling as not to appreciate the noble and inspiring music of the highlands was something he could not understand; but since his officers obviously had no soul of music, he would allow the piper to play on the poop during the hot weather; but it must be clearly understood that as soon as the ship went south into cold or rough weather, the piper must return to the shelter of the alley-way, and so it was.

I remember a curious incident that happened on board the *Torch*. The ship was approaching the north coast of New Zealand under all plain sail. The weather was fine and as the Navigator came on deck to take the sun he found that the fore topsail was obstructing his view and told the quarter-master to keep her away a couple of points. He took his sight; but quite forgot to tell the quartermaster to bring the ship back to her course. He kept the afternoon watch and when he turned over to his relief at 4 o'clock he gave him the original course as the course to be steered, without either of them checking it by the compass. At 6 o'clock the Captain came on deck and said he would keep the second dog-watch (6.0–8.0) himself. All went well till about 7.30 p.m. when there was a sudden yelp from the look-out forward, 'Breakers on the lee-bow, Sir!' 'Bout ship! Down with your helm! Let fly head sheets!' roared the skipper, and happily round came the ship on the other tack leaving the breakers astern. When everything was squared up and the ship on a safe course in deep water, came the inquest; where were we? What course had the quartermaster been steering? What course had been steered during the afternoon and first dog-watches? Had the officers checked the course by standard compass? and, believe it or not, not one of them had! Mac was furious, and not without good reason. He put

all the officers implicated under arrest and swore to have them all tried by court martial. But after due reflexion he realized that *he himself had been in charge of the watch for an hour and a half without once glancing at the compass!* That would not look too well on paper either; so there was nothing for it but to drop all the charges.

The *Torch* class of sloops were of thoroughly bad design, and could neither steam nor sail well, and were moreover dangerous and unseaworthy in bad weather. After the *Condor*, sister ship of the *Torch*, had foundered sunk with all hands in a heavy gale in the North Pacific, the *Torch* and others of her class had their rig cut down to barquentine and later to schooner which was supposed to increase their stability.

Captains of surveying ships often had a reputation for severity and hard slave-driving. Perhaps they had to be like that, for they were always working against time. Amongst those I have known was Captain Jimmy Coombe of the *Penguin*. The *Penguin* was an old auxiliary barque-rigged sloop attached to the Australian station working on the South Pacific survey. Jimmy, in spite of having two, if not three wives living, was still a great man for the ladies. He had a slightly haughty and pompous manner of speaking and always referred to his ship as 'I', never 'we'. He was once heard to refuse a lady's invitation to lunch in these words. 'I'm awfully sorry my dear lady, but I can't manage Thursday, because I have to go up to Cockatoo Island to have my bottom cleaned.' Fortunately one of his officers was present, and explained to the astonished lady that the Captain was referring to his ship and not to himself.

In the *Commonwealth* battleship some fifty years ago, our first Captain was the Hon. Horace Hood, who afterwards lost his life at Jutland when flying his flag in the battle-cruiser *Invincible* which was sunk with great loss of life (the wreck of this ship was afterwards swept for, identified and marked, and thus settled the actual site of the battle for all time).

Hood was very young for command of a battleship, still in his thirties in fact. Moreover, he had a most engaging and almost child-like simplicity of manner. He was a bachelor, shy and retiring, but greatly beloved by all who served under him. He was a rather lonely little figure, and was the only captain I have ever known who regularly messed with his officers. He began by dropping in to the Ward Room for lunch, as an honorary member, two or three times a week and after a while it became his daily practice. He was so popular that Bill Ormsby, the Commander, suggested we might tell the little man that he would be very welcome if he cared to dine with us every evening too. Hood accepted the invitation with joy, and it is hardly too much to say that he was the most popular member of the mess.

Hood was practically tone deaf, but was very fond of crooning hymns to himself, always horribly out of tune, as he walked up and down the bridge. Every now and then he would stop and fire off some totally irrelevant question at anyone who happened to be near him at the moment. Carroll, the Chief Yeoman of Signals, a big jovial Irishman, was a great friend and henchman of Hood's and was often the recipient of these questions. The skipper would suddenly stop in his walk, prod himself in the middle and say, 'Chief Yeoman, do you think the Captain is getting fat?' 'Not at all, Sir, indeed I would say, Sir, that you have an elegant figure', Carrol would answer. 'Oh you would! That's all right then.' 'Onward Christian soldiers...,' etc.

Life in the Home Fleet previous to 1914 could be, it must be admitted, infernally dull and boring, with its everlasting target practice, and tedious exercises, and no one suffered more from this boredom than our Captain. One day he suddenly said to me, 'By God, pilot, I can't stand much more of this.' 'Carroll, give me a signal pad,' and he then and there wrote out a signal to the Admiralty requesting to be relieved of his command! Shortly after he left us, to everyone's regret, and sailed for America where he had been Naval Attaché, and he married a charming American lady, an old friend of his.

Hood was relieved in command of the *Commonwealth* by Captain George Ballard whose name will be remembered by readers of *Mariner's Mirror* for his admirable series of articles on men-of-war of the 1870's.

Ballard was as unlike Hood as any two men could be. He was the most silent and taciturn man I have ever met, with drawn haggard features and morose expression. He was seldom if ever known to smile, indeed we had a wager in the mess that anyone getting a smile out of the skipper should have a bottle of champagne. Wells the Fleet-paymaster once claimed the reward, but no one believed him and there were no witnesses. The older three-stripe officers in the Ward Room who had been accustomed to be treated 'en bon camarade' by Hood, hated Ballard, though personally I got on famously with him and never wished to serve with a better man.

Amongst those who felt the change most keenly was Carroll, the Chief Yeoman. No longer was there any cheery greeting or exchange of pleasantries on the bridge. All was now strict service and miserable as a methodist funeral. I remember one occasion a very raw ordinary seaman had been sent to the masthead as look-out man, and had never been taught the correct way of hailing the bridge. It was a foggy morning and suddenly we were all startled by a yelp from aloft. ''Ere monkey island! de ye see that ship over there?' For a moment everyone gasped, and then of course a gust of

laughter swept the bridge. But the Captain stood there like a brazen image, not a muscle of his face moved as he stared gloomily ahead.

Carroll looked at him, expectantly at first, and then with an expression of utter disgust. Turning away he cast his eye aloft. '*Monkey Island?*' he muttered, '*Monkey* Island! Wait till I get that joker coming down and I'll larn him that I'm no bloody monkey anyways.'

Monkey island is of course Navy slang for the upper bridge sacred to the Captain and Navigating Officer. The look-out should have hailed 'Ship on the port bow, Sir.'

When the *Commonwealth* paid off I left the Home Fleet for good.

THE MOVEMENT OF SAILING SHIPS AS A CLIMATOLOGICAL TOOL

By D. W. Privett and J. R. D. Francis

An attempt has been made to use the speeds of sailing ships crossing the North Atlantic ocean during the eighteenth and nineteenth centuries to infer secular variations in the strength of the Trade winds.

MUCH research has been made into the secular variations of certain meteorological elements, in particular temperature, which are apparent in the extensive records of some land stations in north-west Europe, but as yet no attempt has been made to examine the variations in these elements over the far more extensive oceans. Such an investigation is, of course, almost impossible, for the regular observation and collation of marine meteorological data is comparatively recent in origin. Any historical survey based on direct observations would be limited to entries in log-books made by captains interested in these phenomena; and the records available are inadequate for this purpose. Some measure of the variation of one element, however, might be obtained from the records of sailing-ship movements, for it is reasonable to assume that the speed of a sailing vessel will be roughly proportionate to the strength of the wind. Given the time of passage and approximate sailing distance between two ports it would be possible to estimate the speed of the vessel. There are, of course, other factors involved in such an estimate. For example, there were the differences in the captains' seamanship, and improvements in navigation and a deeper understanding of currents and winds would result in faster passages (e.g. following the publication of Maury's and Findlay's sailing directions), but changes in the design and tonnage of ships over a period of a few decades would not be expected to increase sailing speeds significantly. The effect of these factors is, however, virtually impossible to assess, but it was thought that this defect could be partly obviated by using the mean of a number of passages in each year. The estimated year to year variations in sailing speed might then be regarded as an indication of variations in wind strength. Records of the movements of ships are available for the eighteenth and nineteenth centuries, and it was thought well worth while, in the absence of an alternative method, to see what light these records could throw upon variations in the strength of the major wind systems of the world; in particular the Trade winds, to which much importance is attached to-day as a vital link in the general circulation of the atmosphere.

The average speed of a vessel may be determined with some accuracy from the entries in the ship's log-book, but unfortunately the number of logs which have been preserved are insufficient for a statistical survey, and it is necessary to use sources of data from which the speed may be estimated. These sources give details of the movement of shipping between various ports. First of all there are the records of the Customs House at each port, which give the dates of clearance and entry of all vessels, and where they are bound for or from respectively. These dates are, however, not suitable for this investigation, for clearance of a vessel does not necessarily imply a sailing; a number of days may elapse between the two. A second source of information consists of those publications which provided interested parties with the dates of sailing and arrival of vessels at a number of ports. In the cases of the local newspapers of Bristol and Liverpool the information was confined mainly to activity in the respective ports and to the movements of locally owned vessels between other ports at home and overseas. Another publication was *Lloyd's List* which first appeared in 1734 and catered initially for those persons owning or underwriting vessels belonging to the port of London. This journal supplied its readers with the details of the movements of shipping and other activities bearing on the shipping interests of this country. The latter information is of no real concern to the topic under discussion here, but it makes exciting reading and portrays vividly the contemporary maritime scene with its accounts of piracy on the high seas, slave-trading, Greenland and South Sea whalers, political unrest abroad in addition to the reports of shipwrecks, etc. which emphasize the hazards of sea travel in those days. With the passage of time the scope of this journal widened until it was providing, as it does to-day, accurate daily information on the dates of sailing and arrival of almost all the world's oversea shipping. The accuracy of the entries concerning the dates of oversea arrivals shown in the earlier editions of *Lloyd's List* has, however, sometimes to be treated with reserve. For example, two separate reports of the arrival of a vessel are sometimes given, but each with a different date, or there is the reported arrival of a number of vessels on one day during a period of a week or more when no other arrivals were reported. During this period the editors were often dependent for oversea intelligence on eye-witness accounts from ships' captains returning from abroad, and such a system may be responsible for these inconsistent entries. The dates of sailing from British ports were accurately reported, although it is obvious that not all sailings were accounted for. The reason for this absence of sailings and for the omission, or possible errors, of dated arrivals is probably due to the fact that the underwriters and merchants in those days were more concerned with the safe arrival of a ship than with the length of time of passage.

Despite this fault *Lloyd's List* is undoubtedly the best source of information available on this subject, and it was therefore decided to confine this investigation initially to the data which could be extracted from this journal.

Much of the data on overseas trade in this journal refer to vessels plying between Great Britain and the British West Indian islands. During the eighteenth and first half of the nineteenth centuries the volume of traffic on this route was very large. According to Parkinson (1948) the number of vessels cleared in ports of Great Britain for the West Indies totalled 603 in the year 1792; this number exceeding the number of vessels employed on any other long distance trade route from this country. This volume of traffic was useful to the investigation, for the course followed by vessels on the outward voyage from Great Britain lay under the influence of the north-east Trade winds of the Atlantic ocean for approximately two-thirds of the passage. Having gained the latitude of Madeira the vessels would maintain a steady course for the remainder of the journey. Only during the months of August, September and October, when hurricanes were sometimes encountered in the latter part of the voyage, would these vessels experience anything else but the remarkable constancy in direction and speed which characterizes the Trade winds. Such favourable wind conditions coupled with a relative abundance of data on the movement of shipping suggested that it would be along this particular 'Trade route' that the best results might be obtained.

The first step in this investigation was to make a cursory examination of each edition of *Lloyd's List* (published twice weekly up to 1837 and then every weekday) for 'dated' arrivals of vessels in the West Indies, in order to obtain an estimate of the number of completed voyages recorded in each year. It was found that it was not until 1803 that a continuous record was kept of these 'dated' arrivals. Between 1741 and 1763 arrivals were well documented, although the number was relatively small, but between 1763 and 1802 the dates of arrival were for some reason generally omitted. Even in the immediate years following 1803 the entries are of little value, for during the Napoleonic Wars (1793–1815) the bulk of British shipping sailed in convoy. The movement of these convoys from such anchorages as Spithead, Torbay and the Cove of Cork and their arrival in the West Indies, usually at Barbados, can be determined with some accuracy, but the information is probably of little use as conditions of sailing in convoy were unlikely to have been normal. Following the cessation of hostilities there was a marked improvement in the quality and quantity of the reporting, but the compilers of *Lloyd's List* appear to have maintained their parochial interest in the affairs of the port of London, for no reference was made to sailings from Bristol, Liverpool and the Clyde. During this period these ports had

important connexions with the West Indies, and the vessels so employed formed a very important part of the total shipping leaving Great Britain. For example, in 1805 according to Parkinson (1948) 118 vessels sailed from Liverpool for the West Indies, and in 1801 there were seventy-three sailings from Bristol. The omission of sailings from these ports was not remedied until 1827. An inspection of *Lloyd's List* from then on at ten-year intervals until 1910 indicated that in all probability there would be sufficient 'dated' voyages for the purpose of this investigation. Of course with the advent of steam in the latter part of the nineteenth century the number of sailing ships engaged in the West Indies trade fell steadily, but this was offset by the fact that the reports of their movements steadily improved.

Working on the basis of 'the more observations the better', it was decided to investigate initially the twenty-year period commencing 1827, the year when returns for the West country ports first appeared in *Lloyd's List*. Three attempts were made to obtain results from the Lloyd's data. Of these three only the third will be described in detail, as the other two yielded no results because of the insufficient data. Briefly the first attempt consisted of an analysis of the movement of shipping between Madeira, Teneriffe and Cape St Vincent (Cape Verde Is.), and ports in the West Indies, for in this section of the voyage the vessels were almost entirely under the influence of the Trade winds. It was found, however, that despite evidence of much shipping on this route in the earlier years, the number of 'dated' sailings from these islands decreased over the years and were insufficient for this investigation. An attempt was then made to estimate indirectly the average speed of vessels on this leg of the voyage, by obtaining the average speed between Great Britain and the West Indies and that between Great Britain and the islands referred to above in the eastern Atlantic ocean, which had some local traffic with Great Britain and were ports of call for East and West Indiamen. This method had also to be abandoned because of insufficient data.

As a result of the failure of these two methods, it was decided that there was no alternative but to compute the average speed of vessels over the entire run from Great Britain to the West Indies. This approach had been deliberately avoided from the outset of this investigation, for as much as one-third of the voyage could lay in the path of the anti-Trade winds; a most apt name for the Westerlies in the days of sail. By removing from the record any vessel known to have called at an intermediate port, such as Madeira, it was hoped to compile a list of vessels which sailed direct from this country to the West Indies. The arrival of vessels at Jamaica was also ignored, for there was ample evidence that many of these ships had already

put into other West Indian islands, such as Barbados, thereby increasing the duration of their passage. *Lloyd's List* indicates that the West Indian trade had two peak periods in the year, one in the late spring and the other in the late autumn. Sailings in the summer were very infrequent, as Lloyd's underwriters doubled their premiums from July onwards in view of the hazards the vessels were likely to run during the hurricane season in the Caribbean area. As the number of sailings from Great Britain varied from season to season in each year, it was decided to confine the investigation to one particular period of the year. It was thought that the late spring sailings would be better suited to this investigation, for during winter the vessels were more affected by Westerly winds and storms in the early stages of the voyage. During this latter season *Lloyd's List* shows the movements of ships from port to port, for example along the south coast, as they continually sought refuge from storms. Sometimes these ships were storm-bound for many days, and it was frequently impossible to ascertain from *Lloyd's List* the exact date of sailing from these shores. During the late spring, however, wind conditions were more favourable for the passage down Channel and the majority of the vessels, having passed the Downs at the eastern end of the Channel, are not referred to again until their arrival in the West Indies.

The extraction of data from *Lloyd's List* was a simple, but very laborious task. A record was made of each vessel, the master's name, the date and port of departure, and the destination of the vessel. Only those vessels bound for the Lesser Antilles (from St Kitts in the north to Grenada in the south), Trinidad and Demerara were recorded. This latter port was included in the investigation in order to increase the number of passages on which the yearly mean speed would be based, for though it is not in the West Indies vessels bound for it came under the influence of the same Trade winds. Approximately three months after the date of sailing an entry was found in *Lloyd's List* of the arrival of the vessel in the West Indies. It was necessary to keep a close check for the earliest reported arrival, for vessels frequently made a landfall at Barbados and the date of this and the ship's consequent arrival at another island were both recorded. An example of the work sheet used in this investigation is shown in Fig. 1. With a value for the time of passage and an estimated sailing distance it was possible to compute the average speed of the vessel during the voyage. The mean speed in knots for each year of sailings from this country during April, May and June, and the number of passages on which these figures are based, are shown in Fig. 2 *a*. The range in speed over these twenty years is small (0·7 knots), but this profile does show some variation, and on this basis it might be thought worth while to extend the investigation to cover

the entire period from 1816 until the disappearance of the sailing ship on this route. But first one must consider whether this variation in sailing speeds during the twenty-year period examined can be regarded as a variation in the strength of the Trade winds.

Year 1833 April May June — U.K. TO W. INDIES — Page 1

Ser No.	Ship	Master	Remarks	Ports		Dates				Distance	Time	Speed
				Dep:	Arr.	Dep:	List No: &	Arr:	List No: &			
1.	Donald	Lowthian		Liverpool	Trinidad	1/4	835	3/5	855	4460	32	5·81
2.	Andromeda	Head		Deal	St Lucia	4/4	836	N/D	858			
3	Thos. King	Williamson	from London. arr P. 10/4	Portsmouth	Demerara	12/4	835	11/5	858	4220	29	6·06
4	Wanderer Transport		called Plymouth 12/4 no dated dep.	Portsmouth	Barbadoes	7/4	836					
5	Nightingale		Postal Packet	Falmouth	..	8/4	837	10/5	857	4000	32	5·21
6	Francis	Heath		Liverpool	..	5/4	..	4/5	855	4210	28	6·03
7	Gratitude	Hawkins	in L. again 11/4	..	..	6/4	..					
8	Corinthian	M'Dowel		..	Demerara	7/4	..	7/5	855	4260	30	5·94

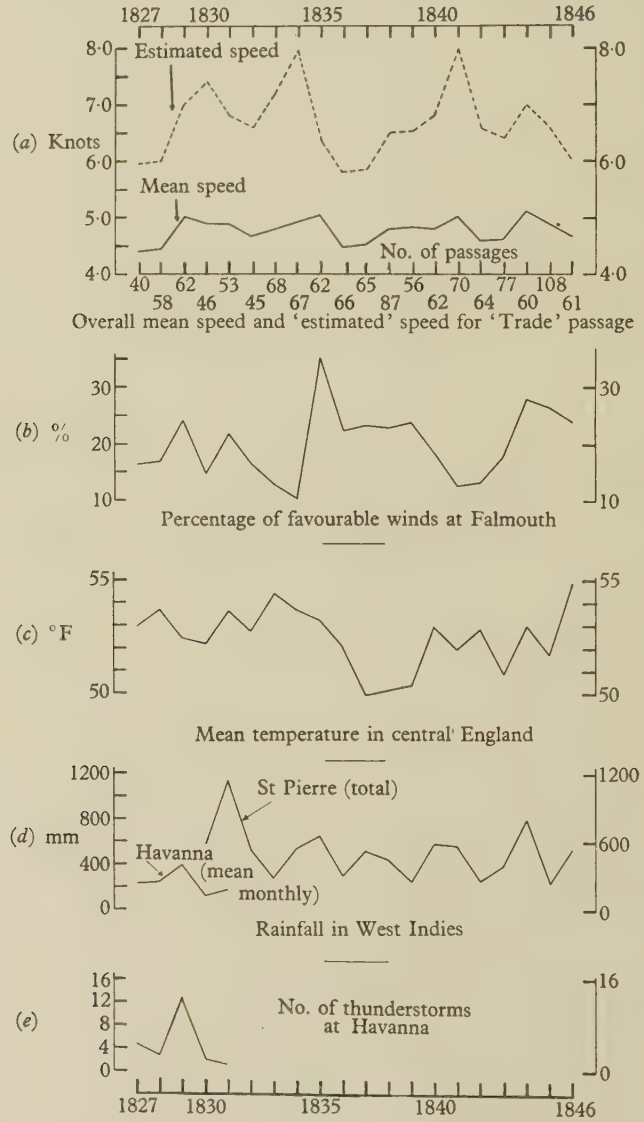
Fig. 1. Example of work-sheet showing detail extracted from *Lloyd's List*.

The overall sailing speeds are composed of the mean speeds of vessels in the Westerlies and those under the Trades. The 'Trade' section of the voyage covers the greater part of the passage from Great Britain to the West Indies, but the effect of the Westerlies in the initial stages of the voyage on the overall speed of the ships is uncertain. The Westerlies are essentially head winds, and it is reasonable to assume that in them the speed of a vessel would be slower than when under the influence of the favourable Trade winds, but a significant deviation from the normal pattern of the distribution of wind direction at the outset of the voyage could perhaps lead to marked variations in the speeds of ships. In *Lloyd's List* the direction of the wind at Falmouth was given for each day of the year, and these readings were used to obtain the percentage of winds during April, May and June of each year which were thought to be favourable for sailing; winds blowing between N.N.W. and E.N.E. were used. The results are shown in Fig. 2*b*, and it can be seen, for example in 1835, that an above-average percentage of favourable winds in home waters could well be an important reason for the above-average speed of vessels in such years. This effect may be investigated further by making a somewhat arbitrary assumption about a ship's speed in the Westerlies. If it is assumed that in a 4000-mile voyage the speed of a vessel for the first 1000 miles (i.e. in the Westerlies) was 2 knots when the winds were wholly unfavourable and 5 knots when favourable, then an estimate for the speed in the Trades

(i.e. the remaining 3000 miles) can be obtained from the following expression:

$$\frac{S_t}{S_o} = \frac{D_t S_w}{D_o S_w - D_w S_o},$$

where S and D denote the speeds and distances respectively in the Westerly (w), Trade (t) and overall (o) sections of the voyage, and where $S_w = (0{\cdot}03n + 2)$, n being the percentage of favourable winds in each year at



(N.B. All plotted values refer to the months April, May and June)

Fig. 2.

Falmouth. The values for S_t obtained by using this expression are shown as the 'estimated' speed for the Trade passage in Fig. 2*a*. As might be expected this correction yields higher values for the sailing speed in the Trades, but there is no really significant change in the pattern of the variation. Other assumptions as to the extent of unfavourable winds and ships' speeds may of course be made, but since the Trade winds prevailed over the major part of the voyage, the basic pattern of the variation obtained is likely to remain, and thus it might be supposed that these changes in sailing speed are indicative of variations in the strength of the Trade winds.

What are required to establish the validity of these variations are some quantitative data on the speed of ships in the Westerly zone, and these are not (as far as is known) available. But it would be equally useful if these apparent changes could be correlated with variations in meteorological elements in other parts of the world, such as a long-term wind record in the West Indies. Unfortunately such wind records are not available, since anemometers were not standardized in the times when sailing ships were sufficiently numerous for their passage times to be of value. Records of temperature and rainfall might be compared with wind records and thus, if the basic assumption is correct, with sailing speeds. Figs. 2*c*, *d* and *e* show the variations in other meteorological elements known to have been recorded for the spring periods of 1827–46; they are respectively, the mean air temperature for central England (Manley, 1953), the mean monthly rainfall at St Pierre, Martinique (Raulin, 1875), the total rainfall for April to June at Havanna (La Sagra, 1842) and the number of thunderstorms at Havanna (La Sagra, 1842). It will be seen that there is little correlation between these variables and the Trade wind speed as revealed by sailing ship data. The 'atmospheric engine' is undoubtedly a complex one, and it is quite possible that the temperature and rainfall figures are the wrong data to correlate with winds, and that some other element may give a better fit.

Whether or not the results of the ship speed investigation give a reliable indication of variations in wind strength is therefore questionable. There is no corroborative evidence from meteorological sources, yet on the other hand the profile obtained by correcting for the Westerlies does give some substance to the pattern of the general variation. But even these basic results must be viewed with some scepticism, in view of some inconsistencies in the entries in *Lloyd's List* and the unassessable factors referred to at the beginning of this paper. The evidence of this preliminary investigation for a twenty-year period suggests that if reliable indications of variations in wind strength throughout the nineteenth century are to be obtained from the movements of sailing ships, then the analysis should be confined to

a route along which vessels would normally expect favourable sailing conditions, such as in the Trades, and along which there was no intermediate port of call, such as between Madeira and the West Indies, and that every attempt should be made to obtain the maximum number of passages, i.e. in addition to *Lloyd's List* other sources should be examined for reports of the movements of shipping. It is, however, unlikely that the data are available to fulfil each of these conditions. It is a great pity, for the sailing ship is potentially a good instrument for giving the average wind speed over a wide area, and this information would be an important contribution to the fuller understanding of the general mechanism of atmospheric processes.

The authors wish to express their gratitude to Lloyd's for permission to inspect the early editions of *Lloyd's List*.

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FRACTIONAL SHAREHOLDING IN BRITISH MERCHANT SHIPS WITH SPECIAL REFERENCE TO THE 64THS

By Rupert C. Jarvis

I

THE property in every registered British merchant ship is by law divided into 64 shares. This fact has given rise to much conjecture, and many and curious are the various theories that have been advanced at one time and another to explain away this apparently arbitrary division. Where the more modest investigators have been content to find its origin in the prize practice of the Napoleonic Wars, the more ambitious have gone either south to the medieval Mediterranean, or north to the Dark Age Vikings. Indeed, some have succeeded in tracing it even further, not only to classical Rome, but to early biblical times. Up to date, the best distance run has been performed by a relatively recent text-book that went so far as Noah's ark, which, although not exactly a registered British merchant ship, did display (so it seems) all the familiar features of part-ownership, and the essential characteristics of this binary division of shares—at least part of the way to the familiar 64.

The current law is expressed in the Merchant Shipping Act of 1896.

The property in a ship shall be divided into sixty-four shares.[1] It is as simple as that.

But the plain business man, the bronzed sea-dog, and the pale but keen-eyed lawyer and scholar, will away with all such simplicity. For example, the typical current text-book of ordinary shipping business practice lays it down quite categorically that this division of a ship into 64ths is not so much a division made 'by law', as it is a division 'by ancient custom'; all the law does—so it seems—is merely to recognize this 'ancient custom'.[2]

Maude and Pollock in their authoritative legal work were content merely to say that 'this artificial rule' of the 64ths 'seems to have been selected on the supposition that the binary system of halving the ship, and each of the resulting shares until the whole is reduced to sixty-four parts, is practically convenient',[3] which, as anyone who has ever had anything to do with it

1 57–8 Vic. cap. 60, sec. 5 (1). 2 E. F. Stevens, *Shipping Practice* (1957), p. 96.
3 F. G. Maude and C. E. Pollock, *Law of Merchant Shipping* (1881), Vol. 1, p. 17 n.

knows, is just what it most certainly is *not*.[1] *Lloyd's List* seems to have accepted this, however, from Maude and Pollock, although it contrived to improve upon it somewhat by finding some instances in (selected) case-law that go to show that there had been 'at all events, some sort of practice to divide a ship into sixteenths before the law divided it into sixty-fourths'.[2] More recently, the Honourable Company of Master Mariners resurrected this as evidence of 'the practice in olden days',[3] and I recollect the late Lord Essendon propounding much the same theory.[4]

My friend the late Arthur Wardle (who, incidentally, was one of the few early researchers to do much work on the old statutory register-books) was fond of quoting Stevens: 'Formerly, the 64 shares into which a ship is divided were considered equal to one pound avoirdupois, the owner of four shares being called the owner of an ounce, and two shares half an ounce, and so on. This resembles the crucial division among the Romans.'[5] One must suppose that 'the crucial division' is a mere slip for 'uncial division'. Wardle then propounds as follows: 'Uncia is the Roman ounce of a twelfth of a pound. If the pound is of 16 ounces, then the ounce will represent one sixteenth, and thus four parts of the ship considered as equal to one pound avoirdupois and divided into 64 parts will equal one ounce.'[6] which seems unnecessarily involved. Wardle goes on, however, that Stevens derived his view of the 64ths from Cicero, who referred to the division of inheritance by ounces. There was evidence also, he said, of the use of the uncial system of shipownership during Venetian times and in later periods, and thus the practice of the 64ths can be traced from modern English law through medieval Venice to ancient Rome.

The true Nordic sea-dog, however, will eschew all the Latin and the texts of the lawyer and the scholar. He will lay it down with all the confidence that is so characteristic of undocumented and unsupported opinion, that the 64ths have come down to us in uninterrupted succession from our Viking forefathers. There were sixteen (or was it thirty-two?—or was it sixty-four?) oars in a Viking ship; each rower had a share in the ship—hence the 64ths—and it is fitting that many a man, and many a woman, and many a boy and many a girl (—indeed 'every housemaid'—)[7] in Norway today owns his (or hers or its) 64th in some modern ship.

1 See below.
2 *Lloyd's List and Shipping Gazette Weekly Summary*, 13 February 1914.
3 *Journal of the Honourable Company of Master Mariners*, July 1950, p. 255.
4 Lecture, 28 October 1937.
5 'Back to the Romans', an (unpublished) memorandum issued through the Liverpool Nautical Research Society.
6 *Ibid.*
7 *Daily Telegraph*, 11 April 1940.

In a more serious contribution, a Lloyd's surveyor and a registrar-general of shipping (after making a few errors in the text-book) came round to the view of Maude and Pollock (cited above) as rehashed by *Lloyd's List*. They say, however, leaning as usual upon the authority of selected case-law, that 'the earliest records suggest that at one time the share of a ship was divided into eight parts, which was later extended to sixteen'.[1] What they probably intended to say was, not that 'the *share* of a ship was divided into eight *parts*', but that the *property* of a ship was divided into eight *shares*—an altogether different matter—and, incidentally, 'the earliest records' is one of those high-sounding references that is usually as impressive to those who do not know, as it is useless to those who would like to. This informative chapter in Blocksidge is brought to its close, appropriately enough, by a quotation from the Old Testament: 'In the self-same day entered Noah, and Shem, and Ham, and Japhet, the sons of Noah, and Noah's wife, and the three wives of his sons with him, into the Ark.'[2] The author's comment is: 'making a total of eight persons as, presumably, joint owners.'[3]

This sort of stuff, although absurd enough, is comparatively innocuous compared with some of the more academic efforts. Professor Kirkaldy, for example, in a schematic account of the development of shipowning, informs us, neatly enough, that 1800 was the period of the 'Free Traders', 1840–50 of the 'useful cargo ships owned by capitalist firms or a partnership (usually divided into eighths)', and 1880 was the period of 'the Sixty-fourther (steamer)'. In 1880, apparently, 'the sixty-fourther became an established fact of some importance, and when the cargo-steamer became an economic reality, large numbers were built and owned on this system'.[4] There were, we are told, abuses of the system from time to time, as in everything human, as for example, when 'slim managing owners allotted more than sixty-four 64ths in one steamer'. We are reassured, however, by Professor Kirkaldy, that in general the system of the 64ths 'worked admirably'.[5]

The above are no more than a few of the more easily citable examples of the sort of nonsense that needs clearing away.

II

To this end it will not be necessary to spend much time either in Dark Age Europe or the medieval Mediterranean. With regard to Viking craft, it is true that the late eighth-century Gokstad ship, from the burial mound of

1 E. W. Blocksidge, *Merchant Ships and Shipping* (1933), p. 122.
2 Genesis vii. 13.
3 Blocksidge, *op. cit.* p. 122.
4 A. W. Kirkaldy, *British Shipping: Its History, Organisation and Importance* (1919), p. 167.
5 *Ibid.* p. 169.

the Norse king, Olav Geirstada Olf, had sixteen rowing ports aside, but our native Sutton Hoo ship of the early seventh century (a beautiful example of the national culture of East Anglia),[1] was apparently driven by thirty-eight oarsmen,[2] while the much later Hebridian galley, depicted in Rodil in Harris, which in general so closely follows the old Norse tradition, has seventeen rowing ports. Cnut's 200 ft. (or perhaps 300 ft.) galley of the eleventh century has been credited with either sixty oars or sixty pairs, and the *Kristssuden* of Hakon Hakonsson, which was in the Clyde in the mid-thirteenth century (held by Lethbridge to be the largest northern galley ever built)[3] boasted seventy-four oars. These, however, must have been exceptional.

Pre-conquest craft have been generalized as having 'from twelve to thirty-five "rooms" or seats for the rowers',[4] and it may reasonably be taken that there is no evidence, archaeological or other, that these Viking or Dark Age vessels ever became standardized into sixteen-, thirty-two- or sixty-four-oared classes.

To leave the Dark Ages and come to the fourteenth century, the Patent Rolls contain references to the building and equipping of certain ballingers in England—vessels of about 40–50 tons—each of thirty-four oars,[5] and Dr Burwash points to a reference to a purchase by Henry V's 'clerk of the ships' of twenty oars '*pro eaden Balingera*'.[6] But even if it could be shown—which it cannot—that Dark Age and early medieval ships did tend to fall into classes of sixty-four oars (or of integral fractions of sixty-four), it would be nothing to the point, for the argument if it follows from anything follows from the number of men working the ship, and it seems hard that one of the men who has apparently been overlooked in this division of the ship, is the captain—unless perhaps he was not counted extra, but merely rowed stroke. Even so, we seem to have overlooked the man (or men) at the quarter-rudder, for it is of course well known that the Viking and other early ships had no rudder at a stern post—double-ended and other early craft being steered by a blade over the quarter.

III

It was one of the characteristics of the medieval law maritime that it did not draw those sharp distinctions, which are clear both in modern law and the law in Rome, between the shipowner (or part-owner) who invested his

1 *The Sutton Hoo Ship Burial* (1947), p. 61.
2 *Antiquaries' Journal*, Vol. xx (1940), no. 2. 3 *Boats and Boatmen* (1952), pp. 17–18.
4 'Shipping', M. Oppenheimer in H. W. C. Davis, ed. *Mediaeval England* (1924), p. 247.
5 *Calendar Patent Rolls, Ric. II*, 1377–81, p. 74.
6 H. D. Burwash, *English Merchant Shipping, 1460–1540* (1947), p. 105.

money in the ship, the merchant who put his merchandise into her, and the mariner who put in his labour and service. For example, one of the recognized ways (among others) of remunerating the medieval mariner was the method of 'portade', by which the mariner had an allocation quota or share of the available cargo-space in the ship. This share was called his 'portade' or 'port' (or '*caricum*' or '*cantarala*'). The man therefore who is primarily a mariner, here combines the function of merchant, and seems to have—at least for the time being—a share in the ship or its freighting, a share, if not in the *property* of the ships, at least in the ship's '*adventure*'.

Eugene Byrne, after a detailed study of medieval Mediterranean shipping (based mainly upon Genoese notarial records)[1] came to the conclusion that it was not until the early decades of the twelfth century that ownership, as such, that is to say the owning as distinct from the sailing and management of ships (and particularly in the overseas trade) showed any marked development. From being owned solely or in simple partnership, vessels passed quickly thereafter into fractional ownership, which, Byrne says, soon became characteristic of all Genoese shipping. He cites, for example, a case in the mid-twelfth century of an owner raising a loan on the security of *quaterium unum navis mee* and what he believes to be another case, from a statement of the property of a partnership: 'that of the revenues of a quarter of the ship... a fifth is in the aforesaid common account'; he goes on: 'there is here illustrated the division of ownership into convenient fourths, and for purposes of alienation or sale or otherwise into fractions of a fourth, leading shortly to ownership expressed in terms of very small fractions of a ship'.[2] It is, however, quite possible that, knowing the later development of ownership (and the notional divisions—and the 64ths—of a *ship*) Byrne is here reading too much into what is quite apparently a merely financial document—that the reference is really to shares in the *revenue of a ship*, rather than to shares in the *property* of the ship herself, as now understood. In any case, it cannot be held that the fractions confined themselves to fourths and binary parts of a fourth, for in another case the fraction mentioned is *trigesimam octenam partem*, although again it is not absolutely clear whether this is a fraction of the revenue of the ship or a real share in the ship herself.

It has been said that at the end of the twelfth century and throughout the thirteenth, Mediterranean shipping was systematically organized into shares, which in Genoa were known as *loca*. These *loca*, or shares in the vessel, were said to vary in number according to her size—Ashburner said

1 E. H. Byrne, *Genoese Shipping in the Twelfth and Thirteenth Centuries* (Mediaeval Academy of America, 1930).

2 *Ibid.* p. 13.

'generally forty... but sometimes more and sometimes less', while Byrne, more widely, between sixteen and seventy per vessel. Each of these *loca* or shares could be bought, hypothecated, sold or otherwise disposed of, as a special parcel of property, altogether independently of the holders of the other *loca*, much the same as the share in a registered British merchant ship may be today. It has been noted that this division into *loca* coincides with the period when even small capital was needed for expansion, and when the attendant dangers made the wide spread of risk advisable; furthermore, the decline of the *loca* system coincided with the later commercial development when risk had abated and adequate capital had become available from less widely dispersed sources.

The fact, however, that no document has yet been discovered showing the disposition where, if this theory is true, we should most expect to find it, namely at the time of building, and the fact that much other reliable evidence relates the number of *loca* in a ship directly to the number of her crew, seem to suggest that the *loca* were not in fact shares in the *property* in a ship, but shares in the *adventure*. This seems to be supported by the fact that during the periods of the crusades and the pilgrimages, the number of *loca* in a ship (or 'adventure') appears to have been related to the physical space on board (? crew space, or passenger space) and hence to her tonnage or freight-earning capacity.[1] In any case, the *loca* (or literally 'room') in the ship—whether passenger 'room', crew 'room', or cargo 'room'—varied, naturally enough, with the size of the ship. Hence, the *loca* did not stabilize at sixteen, thirty-two, sixty-four nor indeed at any other particular number. One might say, therefore, that the mere existence of *loca* in medieval Mediterranean shipping is against, rather than for, the classical descent of the 64ths.

This quota of space in the ship, and its relation to the 'adventure' and the crew, has its counterpart in northern shipping practice. Not only the *Consolatio del Mare*, the fourteenth- and fifteenth-century Catalan code which had such an influence on the medieval law maritime in the Mediterranean, but also the 'Laws of Oleron', which were the basis of the medieval law maritime in northern Europe, recognize the portade system referred to above, which shows close analogies to the system of *loca*. Occasionally the system of portade is met with in combination with one or other of the methods of remuneration of the ship's company. From references in the 'Inquisition of Queenborrow' and elsewhere,[2] it is clear that this scheme of the mariners' share in the 'room' or freighting of the vessel was familiar in England in the fourteenth and fifteenth centuries, although Dr Burwash

1 Cf. W. Ashburner, *The Rhodian Sea-Law* (1909), p. clxiv n.

2 Sir T. Twiss, *Black Book of the Admiralty* (1871), Vol. I, pp. 135 and 138–41.

finds it somewhat in decline in the early sixteenth century.[1] It is, however, perfectly clear that those stipulated shares are not by any means shares in the ship in the same sense as the 64ths, and on the whole it seems most likely that a number of false conclusions have been drawn with regard to these portades and the Genoese *loca*, which a closer study of the problem would not sustain.

IV

There is, however, good thirteenth- and fourteenth-century evidence that the property in ships, as distinct from in their adventures, was already in some manner or other divided into shares, if only to provide the necessary capital jointly to finance the building and furnishing for sea. For example, a fourteenth-century version of the 'Good Customs of the Sea' declares that the *senyor de la nau* (or *dominus navis* or managing-owner) 'ought to explain and make intelligible to the part-owners' at the time the ship is built, 'into how many shares he intends to divide it',[2] a fact that necessarily implies that it could not have been the invariable practice to divide it into any stipulated or well-understood number. The earlier thirteenth-century Gotland code, the 'Wisby Town-law', provided for part-ownership to be specified in terms of shares,[3] but where, for example, the code of maritime law drawn up at Lubeck in 1299 (for the use of the Osterlings in Flanders) recognized ownership by a 'cumpane' (or company) apparently in common partnership[4] *not* divided into shares, the 'good usages' of the commune of Oleron recognized a form of part-ownership by shares that did not constitute a partnership.[5]

Even where a division into notional shares was a division of the ship and not of the adventure, there is no evidence either in the Mediterranean or in the north of any fixed principle of division into a standardized number of shares—sixty-four, thirty-two, sixteen or any other number.[6] Ashburner[7] says that twenty-four parts (or *carati*) became usual in the Mediterranean in the fifteenth and sixteenth centuries, although earlier the number had been at the 'immediate convenience of the owners' and might vary from voyage to voyage.[8]

1 *Op. cit.* pp. 47–8.
2 *Black Book of the Admiralty*, Vol. III, p. 51.
3 *Ibid.* Vol. IV, pp. 410–11.
4 *Ibid.* Vol. IV, pp. 374–5.
5 *Ibid.* Vol. I, pp. 379–81 and 383–5.
6 The fourteenth-century 'Good Customs of the Sea' refers to the case of a part-owner furnishing only one-half of the sixteenth he took up at building (Twiss, *op. cit.* Vol. III, p. 53).
7 W. Ashburner, *op. cit.* p. clxiv.
8 A remark that seems, however, to suggest a confusion with the *loca*. Genoese notarial records show that in the *societas maris* the venture was often financed by a travelling partner supplying one-third of the capital and an investing partner supplying two-thirds, who shared the profits equally (*Bulletin of Business Historical Society*, Boston, Mass., Vol. XV (1941), p. 88.

It cannot, however, be denied that a continuous binary division was often convenient and indeed in certain circumstances even inevitable. Early references are not difficult to cite; there is, for example, a reference on the close rolls of Henry VI of the ownership of 'one moiety and half a quarter of a ship called the *Trinite* of Hull' (1448).[1] Notwithstanding such examples, however, there are a number of reasons why we would not expect the *invariable* practice of the binary division of shares down to the 64th to go back nearly so far in English maritime law and practice. No such scheme could have been conveniently reconciled with prize practice, for example, which had long been based on thirds. The moiety granted to the captors by John,[2] had become a third at least by the fourteenth century,[3] and before the middle of the fifteenth we find thirds of moieties.[4] The third became more firmly established as the prize fraction during the Commonwealth—a formative period in ships' registry practice. It is not necessary here to enter into any detail about the 'tithing' of privateers' prizes during the Interregnum,[5] but obviously the operative fraction here was not solely the half. When, for example, the Council of State was considering the terms upon which commissions might be granted to privateers during the Dutch war, it was submitted to council that 'Commissions might be granted to those who have no private damages to redress', not to 'allow all to the takers except the tenths', but 'only a half or a third, and reserving the rest to the public'.[6] We might perhaps dismiss 'the tenth' as a levy upon the yield (of prize goods as well as prize ships) rather than a division of the ship, but 'the third' is an altogether firmer reference.

V

It has frequently been asserted and has in general been accepted, that prior to the 64ths being put upon a statutory basis the binary division (down to the 64th) had already become the invariable practice. Certainly anyone at all moderately well acquainted with eighteenth-century shipping affairs can quite easily cite a number of references that show conformity with this assumption. For example, an Act of 1747 relative to the appointment of commissioners and trustees of the harbour of Lancaster, provides for nominations from such merchants and others as may 'be possessed of a sixteenth or other greater part or share of any ship or vessel of the burden of fifty tons or upwards'.[7]

1 *Cal. Close Rolls*, 1447–54, p. 41.
2 Rot. Pat. 6 John, mem. 2.
3 Inquisition at Queenborrow, § 1 (but see also § 18).
4 *Rotuli Parliamentorum*, v, 60a.
5 *Calendar State Papers, Domestic*, 1650, p. 33 (there are, of course, many other references on this series).
6 *Calendar State Papers, Domestic*, 1651–52, p. 345, *and Ordinance*, 13 March 1642/3.
7 21 Geo. III.

In 1736 a 1/16th share was sold of the *Winchester*, a new vessel of 562 tons lying in the Thames—more significant perhaps because she is known to have been a new vessel.[1] In 1774, the *Lord Holland* (built in 1771 for the service of the East India Company) was declared in the Court of Admiralty 'to brench off' into 16th and 32nd parts.[2] In 1805 Sir William Curtis bought and sold a 1/16th share in another East-Indiaman, the famous *Nottingham*.[3] In 1803 a parcel of 1/32nd shares in the *John Thomas*, a vessel of 175 tons built at Whitehaven in 1761, was bought by Curwen for £717. Curwen owned also 1/8th of the *Isabella*, 1/16th of the *Three Sisters*, 1/16th of the *Fletcher* and 1/32nd of the *Lively*.[4] The *Earl of Derby*, a Liverpool ship of 272 tons, was built in Liverpool in 1784 and owned in 1786 by three owners in unstated shares; in 1787 two separate eighths were sold to two Liverpool merchants.[5] As early as 1713 the *Martin Ketch* of Blakeley (or Cley) was owned in 1/8ths or 1/16ths.[6]

The list could easily be lengthened, but already, perhaps, looks quite convincing. It is, however, just as easy to cite cases to the contrary—with this distinction, that no number of instances of 8ths or 16ths can prove that the 'binary division down to the 64th' was invariable, whereas a few instances to the contrary will prove that it was not. For example, Bell's famous *Comet* was lengthened in 1818, re-registered in 1819, and subsequently sold by Bell, not in 32nds but in 36ths.[7] Paul Jones—under the name of John Paul—on his release from his indentures, is said to have received a 1/16th share in the *King George's Packet*, her master receiving a 1/3rd share.[8] In 1787 and 1789, Moses Benson, sole owner of the ship *Benson* of Liverpool (351 tons, built at Liverpool in 1777), transferred 1/3rd to her master, 1/6th to a Liverpool merchant, another 1/6th to a Jamaican merchant.[9] Both the *Hopewell* of Greenock (102 tons, built in Greenock in 1812) and the *William and Jane* of Inverary (26 tons, built in Kirkcudbright in 1814) were sold in 1818 and 1819 respectively in 3rds.[10] Gore and Bulkeley, the

1 B.M. Add. Char. 42293.

2 R. G. Marsden, *Reports of Cases...Admiralty* (1885), pp. 145–53.

3 National Maritime Museum: register-book 241/1787—24 August 1805 and 27 October 1806. (She is described by Basil Lubbock—in C. N. Parkinson, *The Trade Winds* (1948)—as of 1152 tons, length 130 ft., beam 40 ft. In her builder's certificate, however, 'under the hand of William Cleverley', she is described as of 1151 tons, length 174 ft., breadth 40 ft. 7 in., height 5 ft. 8 in., a three-decked three-masted square-sterned ship, with poop-deck, stern and quarter galleries, a man for figurehead, and pierced for 56 guns.)

4 Curwen MSS. Workington.

5 Custom House, Liverpool: register-book 25/1786.

6 P.R.O. Exchequer Commission, 11–12 Anne.

7 Custom House, Greenock: register-book 6/1820 (10 January and 3 October 1820).

8 A. C. Buell, *Paul Jones, Founder of the American Navy* (1900), Vol. 1, p. 7.

9 Custom House, Liverpool: register-book 86/1786.

10 Custom House, Greenock: register-books 26/1816 and 35/1816.

noted Liverpool shipowners, had shares in the *Golden Lion* in 1749 in 20ths.[1] In 1821 the *Glasgow* of Glasgow, a 52-ton steam vessel, was sold in 14ths, and the *Rothesay Castle*, a 74-ton schooner, was held in 1822 in 80ths.[2]

In 1787 John Broster, a Liverpool merchant, half-owner of the *Industry of Liverpool* (a 122-ton barque, ex-Spanish prize),[3] acquired the other half and sold 1/6th of the whole to a Liverpool mariner. [4]The *Largs* of Glasgow, an early paddle-steamer, built in Port Glasgow in 1822 (83 tons, 93 ft.), was registered in 1823 in the names of no less than 150 part-owners.[5] Other vessels of the Clyde, the *Arrow*, *Clyde*, *Star*, *Lion*, *Ailsa*, *Stag* and *Swan*, to name only a few, were likewise registered in long lists of part-owners.[6]

Obviously, the only conclusion to be drawn from contemporary manuscript evidence is that neither before nor after the Act of General Registry of 1786 was there any invariable practice of binary division down to the 64ths; property in ships was held apparently in any convenient fraction.

VI

Lord Liverpool's Act of 1786[7] has occasionally been written off as making no fundamental change in the general body of the navigation laws. This Act, however, made a number of important changes in the law of registry, and indeed, its provisions lie at the very root of modern registry practice; certainly the statutory register-books as we know them today date directly from this particular provision. The Act completely overhauled—tightened up and tidied up—the whole of the late eighteenth-century registry law and practice. Yet, it is to be noted, it made no reference to the 64ths, nor was the division anywhere mentioned in the quite extensive discussions at the drafting and Bill stages.[8] Since there are still in existence a number of fine and unbroken runs of these substantive register-books up to and beyond the date when the 64ths were first made statutory, it is surprising that these registers seem never to have been examined in relation to this particular problem. With a view therefore to ascertaining the pattern (if any) in the property-holding in British merchant ships prior to the introduction in 1824 of the statutory division into 64ths, I examined and

1 *Transactions, Historic Society of Lancashire and Cheshire*, Vol. 1, pp. 120–1.

2 Custom House, Glasgow: register-books 7/1821 and 9/1822.

3 Taken by the *Vengeance*, a private ship of war of Liverpool condemned in the high court of Admiralty, 6 October 1779.

4 Custom House, Liverpool: register-book 40/1786.

5 *Ibid.* Glasgow 12/1823.

6 *Ibid.* 1–5/1823, 20–23/1821, etc.

7 26 Geo. III, cap. 60.

8 See the Liverpool Papers in the British Museum—Add. MSS. 38218–21, 38309, 38346–7, 38359, etc.

analysed in some detail, both selected and random samples of such property holdings.

In a random run of over 6000 holdings in the port of Whitehaven, for example, I found that rather more vessels were held in combinations of part-owners in odd numbers than in even. This fact is of no particular significance except that it happens to be true—inasmuch as the exact extent of each holding is not explicitly stated. For example, so far as the 1786–1824 register-books are concerned, three part-owners may quite possibly have owned one-half, one-quarter and one-quarter respectively, or on the contrary they may quite possibly have owned in equal thirds; there is nothing to show. Post-1824 registries, however, suggest that vessels were in fact frequently owned in equal thirds, a situation the 64ths could not correctly express.[1] However, among a random run of 6000 holdings, every combination of part-owners was found, up to and including twenty-nine, except (curiously enough) twenty-four. If we exclude vessels held in sole-ownership about 85% of all vessels were held by part-owners in various combinations between nine and twenty-two. The most frequent combinations being between twelve and twenty.[2] Only about 12% of all vessels examined were held by two, four, eight or sixteen part-owners. If, therefore, we were to assume, for the sake of simplicity, that all registered holdings were equal—it ought, of course, to be admitted that they might in fact have varied in all sorts of odd combinations—no less than 88% of all vessels could not have been expressed in 64ths without doing some distortion to the facts.

It is not at all difficult to show, by reference to the primary manuscript sources, first, that during the currency of the 1786 Act (that is, before 1824), not only that the property in vessels was divided into any fraction that happened to be convenient; but also that the division into 64ths, when it did come (in 1824), was[3] strange and unfamiliar to all parties.

Under the 1824 Act, the local registrars mostly realized that they could not legally register each one-third owner as possessed of $21\frac{1}{3}$ 64ths, for the law specifically forbad the registry of a fraction of a share; nor could they properly register each as owner of twenty-one 64ths only, as this would leave one share unallocated, and hence the vessel would not have been fully registered. A common way round was to register each of the three part-owners as possessed of twenty-one shares, and to register the 64th/64th as

1 See below.

2 These facts at Whitehaven are in considerable contrast with certain other ports: in Bideford, for example, a random sample of 100 ships calling at the port in 1786–7 showed a total of only 370 registered owners. A much longer run at Liverpool showed that two-thirds of local vessels were each owned by three or less owners, and three-quarters of the vessels by four or less.

3 As stated above.

held jointly by the three of them. Even this does not quite accurately express the facts of the case, and it leaves problems of survivorship, for example, which could be awkward in the event of the death of one of the part-owners. As is often the case, the solution to the problem appears simple only to those who do not fully understand it. For example, one of the difficulties here is that the owners of the separate shares in a ship are not on that account necessarily constituted a partnership. They are not partners in the ship; their interest is not that of joint-owner or joint-tenants. There is an ownership-in-severalty, and the interests of the separate part-owners resemble those of tenants-in-common.[1] If an owner-in-severalty is, like a tenant-in-common, associated with two others, this relationship is not legally correctly expressed by constituting him the owner absolutely of 21/64ths, and the joint owner (with two others) of the odd 64th; for by that form of registry he is debarred from disposing of his full third of the ship without the consent of the other part-owners,[2] that is to say, by the mere registry in that form the ownership-in-severalty (or tenancy-in-common) is given one at least of the characteristics of a partnership. Nor is the case fully met by another common subterfuge, namely that of registering twenty-one shares to each of two of the part-owners, and twenty-two to the third, for thereby one of the 'equal-thirds' is constituted the senior co-owner.

Any number of registries could be cited to illustrate these points. To take a few almost at random, the *Duke of York*, a 111-ton Cowes-built schooner (1796), was owned in equal thirds by her master (of Portsea), a Portsmouth ship-chandler, and the Consul-General in the Azores. The registrar at Portsmouth made an entry in his register-book of 21/64ths to each of them, leaving the odd share unallocated, but added at the bottom '[plus] fractions, 1. Total 64'.[3] The vessel was thus not fully registered. The *Jubilee*, *Amity* and *Mary Ann*, all of Portsmouth, were all owned by two part-owners in the proportions of one-third/two-thirds. Within twelve months of each other the 19-ton smack *Jubilee* was registered, 21/64ths and 43/64ths (a mere approximation); the *Amity* '21 and a fraction' and '42 and a fraction'[4] (which was not legal); and the *Mary Ann* 21/64ths and 42/64ths 'plus fractions—1',[5] which left the vessel (like the *Duke of York* above) not fully registered. The *Venus*, a 30-ton Portsmouth cutter, was owned in equal thirds by a mariner, a victualler and a cattle-dealer. She was originally registered '21/64ths and a fraction' to each part-owner, but later amended to 21/64ths each, 'plus, 1 fraction = 64'.[6]—which could not be supported

1 F. Vesey and J. Beames, *Reports of Cases* (1812–14), Vol. II, p. 242.
2 J. Maule and W. Selwyn, *Reports of Cases* (1814–29), Vol. II, p. 223.
3 Custom House, Portsmouth: register-book 4/182.
4 *Ibid.* 9/1825. 5 *Ibid.* 47/1826. 6 *Ibid.* 37/1826.

by law. Another *Venus*, of Cardigan, was registered 21/64ths each to two mariners and a farmer, with 'fractions—one' allowed to stand.[1] The French vessel *La Nécessaire* was by H.M.S. *Cynthia* a prize of war; she was later renamed *Endeavour* and acquired by a shipwright and a master-mariner, apparently in the proportion of two-thirds/one-third; she was registered, however, forty-two shares to the shipwright and twenty-two to the mariner.[2]

A very good illustration of forcing the facts to fit the formula is seen in the *Rob Roy*, an Ayr-built sloop of Stranraer. She was owned two-thirds by Thomas Lindsay, a Stranraer 'merchant and baker', and one-third by William Campbell, a local schoolmaster. When she was first registered on 18 May 1825 the local registrar—quite obviously familiar with a third of a ship, but not with a 64th—registered $42\frac{2}{3}$/64ths to one, and $21\frac{1}{3}$/64ths to the other. This registry, however, although it may have satisfied the facts, certainly failed to satisfy the law. The register-book, therefore, contains the later entry: 'Custom House, Stranraer, 15th June, 1825. William Campbell, schoolmaster in Stranraer has transferred by Memorandum dated this day, upon a bill of sale, one third part of a sixty-fourth share to Thomas Lindsay, merchant and baker in Stranraer'.[3] This 'correcting' entry certainly satisfied the law, but it seems very likely at the cost of doing violence to the facts, for it may very well be doubted whether even a schoolmaster would think of dividing a 28-ton sloop into 192 parts—why 192?—merely in order to dispose of one of the 192nds to the local baker.

The 22:21:21 formula may have been of convenience in those instances where it was intended to constitute one of the three part-owners the senior or the managing-owner. This was probably intended when the *Prince of Waterloo*, a square-rigged vessel of 288 tons, built in Aberdeen in 1827,[4] was transferred in 1830 from fifteen Aberdeen co-owners to a gentleman in London, a master-mariner of Scarborough, and a Wapping ship-chandler, in the proportion of 21:21:22.[5] Many instances of this sort could be cited.[6] A somewhat similar variation, for example, was occasionally made even with half-shares, as in the case of the *Eliza* of Bideford, a 60-ton

1 Custom House, Fishguard: Cardigan register-book 5/1825 (see also *Calypso*, a 150-ton square-rigged vessel built at Peterhead in 1817—London 1036/1825 and Table Bay 4/1834).

2 Custom House, Portsmouth: register-book 33/1824.

3 Custom House, Stranraer: register-book 4/1825. The only other local registry potentially involving such a problem is that in respect of *Roberts of Stranraer* (of Stranraer—a Ramsey-built smack of 29 tons) also owned in equal thirds. She was registered 3 × 21—'The three owners above-named joint owners of one sixty-fourth'. This also is unobjectionable in law, but inaccurate in fact.

4 Custom House, Aberdeen: register-book 34/1827.

5 Custom House, London: register-book 364/1830.

6 For example the *General Hewitt*, an East-Indiaman of 960 tons, built in Calcutta in 1825—*ibid.* 994/1825 and 339/1830.

brigantine built at Barnstaple in 1824, where 33/64ths are registered to the ship-builder and 31/64ths to her master.[1] An exceptional method of giving a master a part-share in his vessel in a way in which he could not alienate it without the consent of his co-owners was to register 63/64ths to the names (for example) of the other co-owners either jointly or severally, and the odd 64th/64th to one or more of the co-owners jointly with the master.[2]

A further difficulty after 1823, when a third of a ship had been taken, was how to divide the remaining property if it were not taken in other thirds. For example, in 1826 Jonathan Bartholomew of Arundel seems to have taken the third of a ship, and the remaining 2/3rds was taken by two men of Arundel and one of London, presumably in equal shares, that is to say 2/9ths each. This could not be registered $21\frac{1}{3} + 14\frac{2}{9} \times 3$, but 21 + 15 + 14 + 14/64ths.[3]

The difficulties with the 'fractional shares', furthermore, are not confined to the thirds: they are common also to the fifths, sixths, sevenths, and so on. When the *General Brock*, a 148-ton vessel built in 1825 in Bermuda, was registered in London in 1830 by four city merchants, 13 × 3, + 25/64ths[4] or when the *Active*, of 119 tons, was registered in 1825 in Arundel by four men and a widow, 13 × 4, + 12/64ths, the real intention was probably to register in fifths—which could not be exactly expressed in 64ths.[5]

Other fractional shares became even more complicated. For example, when the *Castlemalgoyn* was registered by twelve co-owners in Cardigan in 1825, the real intention may have been to register in terms of 12ths or 24ths, neither of which could be exactly expressed in 64ths. In the result the twelve co-owners had 64ths allocated in various portions and approximations up to a total of 61, leaving '+ fractions 3 = 64'.[6]

The gradual formalization—not to say falsification—of a registry can sometimes be traced through its various stages. For example, the *Charles* of Bideford, a square-sterned brigantine of 132 tons, was built at Barnstaple in 1812, and was re-registered at Bideford in 1822 in the names of nine part-owners, separate shares unspecified. In 1824 it became necessary to specify. The master owned half the ship (registered as thirty-two); a quarter of the ship had been halved by a mariner (eight) and the remainder halved again by a merchant (four), and the remainder halved once more by a merchant and a widow (two each); the remaining quarter of the ship had

1 Custom House, Bristol: Bideford register-book 3/1836 (see also the *Caroline* of Bideford, a 59-ton schooner, built in Prince Edward Island in 1840, Bideford 8/1841).
2 Custom House, London: register-book 154/1830.
3 Custom House, Littlehampton: Arundel register-book 5/1826.
4 Custom House, London: register-book 350/1830 and 652/1826.
5 Custom House, Littlehampton: Arundel register-book 5/1825.
6 Custom House, Fishguard: Cardigan register-book 2/1825.

been divided into three by a merchant, a mariner and a widow, making each of the last three holdings 1/12th of the ship.

These latter shares could not, therefore, be expressed in whole 64ths, and were as a matter of fact registered at Bideford as $5\frac{1}{3}$/64ths each, a registry that for some reason or other—or by oversight—was allowed to stand.[1] When the vessel was transferred to Newport, however, in 1837, the registry was 'corrected' at Newport to show the three 1/12-owners owning 5/64ths each, the odd 64th being owned by them 'in equal proportions'—which was as inaccurate as it was absurd.[2]

VII

Not to be more tedious then, a deal of contemporary evidence goes to show that upon the statutory introduction of the 64ths in 1824, this exclusively binary division of notional shares was thoroughly unfamiliar at precisely those places that had had most experience as to the property-holdings in ships, namely the local statutory registrars. One might ask, therefore, how exactly the 64ths came to be written into the 1824 Act.

By the end of the eighteenth century, the various bodies of Customs law—of which ship registry was only one—had been accumulating since the thirteenth century, and were now contained in over fifteen hundred statutes. Whatever the legislators might be doing, the administrators were keen on reform. Nicholas Jickling[3] and Richard Frewin[4]—two Customs officials—had done good work over the turn of the century, consolidating and digesting; but the general body and fugitive text of the law, confusing in the extreme, was still left scattered down the centuries. It was left to James Deacon Hume,[5] a modest official in the Long Room of the London Custom House—he was a Bench Officer—to conceive the notion of repealing all extant Customs law (including of course all registry law), and of consolidating and re-enacting the operative passages into a systematized series of statutes[6] that later became 'the ten standard acts'.[7] Sanction for Hume's immense undertaking in the Customs was obtained from the Treasury; he was relieved of his routine duties 'at the Bench', and was established in chambers in Westminster.[8] He spent nearly three years on

1 Custom House, Bristol: Bideford register-book 13/1822.

2 Custom House, Newport: 2/1837. (It was absurd because, in strictness, it left each of the three holders of the 1/12th shares encumbered with regard to unfettered disposal of their shares, in a way in which the other part-owners (i.e. of the half 16th and other shares) were not encumbered—which could not have been intended.)

3 N. Jickling, *A Digest of the Laws of the Customs* (1815), 2 vols.

4 Frewin and Jickling, *A Digested Abridgment of the Laws of the Customs* (1819).

5 C. Badham, *Life of James Deacon Hume* (1859).

6 6 Geo. IV. capp. 105–17.

7 8–9 Vic. capp. 84–93.

8 Badham, *op. cit.* p. 21.

his great task, and his 'standard acts' received the royal assent in 1825. In the meantime, however, the registry of shipping had come up for special review, and Hume was dealing with the final draft of the Bill already by the spring of 1823. It was enacted before the year was out,[1] and was repealed and formally re-enacted in 1825,[2] to take its place—6th—among Hume's[3] 'standard acts'.

The 1823 preamble recited that its object was to comprise and consolidate into one act the several provisions then current, but these were to be 'varied and altered in some respects'. One, apparently, of the 'variations and alterations' was to the effect that—'the property in every ship or vessel of which there are more than one owner, shall be taken and considered to be divided into sixty-four parts or shares; and the portion held by each owner shall be described in the Registry as being a certain number of sixty-fourth parts or shares'.[4]

The whole of Hume's official life had been spent as a working officer of Customs, and it is likely that he had met the practice of dividing a ship into 'eighths of eighths' in registering as British ships the captured and condemned prizes[5] of the French and American wars. The provisions with regard to such registry were contained in the Act of 1805[6] which required all condemned ships (including their cargoes) to be vested in the captors, and divided as prize among them, agreeably to the proclamation of 7 July 1803.[7]

This provided that 'distribution should be made as follows: the whole of the neat [i.e. the net] produce [shall be] first divided into eight equal parts'. Certain of these eighths were then allocated 'whole' (for example, those to the captain, or the admiral, if present), while certain other of the 8ths were further subdivided in differing proportions among the various members of the crew. It is possible, since the subdivision could not go on indefinitely, that the 8ths to be divided were allowed (like the whole ship) to be 'eighthed', and that the 8th of the 8th thus became the 64th.

This may, *or may not*, have been the case, but it is perfectly clear from the records relating to the drafting stage of the 1823 Bill, that it was never pretended that the division into 64ths was already customary, or even familiar. James Deacon Hume himself referred to it in his notes on the Bill as 'this arbitrary division', and admitted that he had introduced it only to secure 'the certainty of clear entries of shares by the various registering

1 4 Geo. IV. cap. 41.
2 6 Geo. IV. cap. 110.
3 3–4 Will. cap. 55, 8–9 Vic. cap. 89, etc.
4 4 Geo. IV. cap. 41, see 30.
5 7–8 Will. III. cap. 22, sec. 19.
6 43 Geo. III, cap. 160, sec. 1.
7 *London Gazette*, 5–9 July 1803.

officers'. It was, then, neither the ships nor the shipowners that Hume was thinking about—it was 'the various registering officers'.[1]

A version of the draft proposals was circulated to some of the interested parties before any of its parliamentary stages, and certain of the shipowners were quick to see the objection to the 64ths, both the Ship Owners' Association of Liverpool and the West India Committee, for example, moving their objections. The Liverpool shipowners represented that the clause 'which directs that vessels shall be held in 64th shares [is] considered to be very objectionable'; they objected not only to the division of *every* ship into 64ths shares, but to the division of a ship into *any* arbitrary number. 'It will be equally inconvenient if the vessels are directed to be owned in any other given number of parts, as none could be fixed upon which would be applicable to the various shares or proportions in which many vessels in co-partnership concerns are held and sub-divided—the alterations in which would be attended with great inconvenience and difficulty.'[2] Being practical shipowners, concerned primarily with the practical management of ships, they could not see the need for any arithmetical standardization of share division. Being practical men, however, they made a practical suggestion. If there must be some sort of statutory notice of the number of shares into which a ship is divided, then 'the particular number of shares in which each of the [part-] owners of vessels may be, or agree to be, interested', might be 'endorsed on the back of the register'; and as it would seem 'that every valuable object intended by [this clause in] the Bill to be accomplished might be obtained' by this means, 'it is hoped that this alteration in the bill may be effected'. They addressed themselves therefore to Huskisson in those terms.[3]

The West India Committee, however, made a suggestion even nearer to the draft clause in the Bill. They suggested that instead of holding all ships in 64th shares and no other,

let it be enacted that the number of shares into which each ship is divided shall be named in the register, and that the names of the owners be endorsed on the back in some such form as this:

Names of owners	No. of shares in which this vessel is held	No. of shares held by each owner
AB	eighteen	5
CD		4
EF		3
GH		6

and if it be thought desirable, let it be enacted that no ship shall be divided into more than 64 shares.[4]

1 P.R.O.: B.T./1/181 (bundle G. 7), (16).
2 *Ibid.* bundle G. 7 (15). 3 *Ibid.* 4 *Ibid.* bundle G. 7 (16).

Submitting to Huskisson his answer to these objections, Hume argued—not very convincingly—that although there might seem to be objections to the 64ths now (i.e. in the year 1823), 'in a short time the computation of property in shipping by 64th shares will become habitual, and there will become few cases in which It may not be agreed that some one of the [part-] owners shall take the surplus share or two or hold a share or two less than the others'. It is particularly to be noted—with reference to the contention that all the act did was to give statutory expression to a practice already firmly established—that Hume at no time contended that the computation of property in ships was already in terms of 64ths, but on the contrary expressed the view that in consequence of such enactment the computation 'in a short time... will become habitual'.[1] He summed the matter up: 'This division of shares is not absolutely necessary—but I should be sorry to lose the machinery of it.'[2] It was the executive machinery Hume was interested in. Hume insisted therefore upon the retention of the clause as drafted, and Huskisson—overawed somewhat, perhaps, by Hume's very considerable executive experience—conceded the point, and the clause stood in the Bill and in due course became law.

In his minute to Huskisson from the Custom House on 26 April 1823, Hume made an important confession as to the shortcomings of his scheme of 64ths, a shortcoming the significance of which Huskisson was not technically competent to appreciate. Hume said that doubtless part-owners of vessels not equitably expressible in 64ths would agree among each other who 'shall take the surplus share or two, or hold a share or two less than the others'. He then went on: 'still, it will be of little important whether this be arranged or not—their Bills of Sale will express their actual property although the integral proportions only are registered.'[3] Hume did not, apparently, see that this must necessarily undermine the whole doctrine of the registry being the substantive title to the property of the ship. Thereafter,[4] in order to ascertain the 'true' title, one might be driven behind the (legal) registered title and have to refer to (what thus became) more authoritative documents, namely the relative Bills of sale. Thus, because in practice the true interests of certain part-owners cannot, within the constricted form of the 64ths, be legally expressed on the face of the statutory register, valid interests are created by suppressed trusts—equitable interests that the courts will enforce,[5] notwithstanding the invariable policy of the various

1 P.R.O.: B.T./1/181 (bundle G. 7), (16). 2 *Ibid.* 3 *Ibid.*

4 But see Vesey, *Chancery Reports*, 18, pp. 65–6, where Lord Chancellor Elton enumerated the policy of the registry acts, and p. 60 where he distinguished between transfers of property by acts of the parties and by operation of law (1805).

5 *Equity Reports*, 1853–55, Vol. III, p. 973.

merchant shipping acts as to the disregard of any interest not appearing in the register-book. It is perfectly clear that the register may not take any notice of any trust—express, implied or constructive—and that the person who (in disregard of such a trust) appears on the register as the owner or part-owner is legally vested with 'power absolutely' to dispose of the ship or share of the ship and to give effectual receipts in that process.[1]

It has, however, necessarily had to be held that this section—nothwithstanding its clear terms—cannot be construed in fact to prevent British merchant ships, or shares in such ships, from being held in trust (e.g. in shares other than 64ths) like any other personal property. The Act can only 'prohibit the registrar from receiving or recording any notice' of such a trust.[2] This is only to say that it is an inevitable consequence of the 64ths that the statutory registry of property in British merchant ships and shares in such ships is legally recognized as being occasionally false. The particular point, however, has lost much of its sharpness by the subsequent development of joint-stock ownership, whereby the whole property (in the terms of the 64/64ths) may be registered undivided and undistinguished, in the trading name of a joint-stock company.

1 17–18 Vic. cap. 104, sec. 43 and 57–59 Vic. cap. 60, sec. 56.

2 Sir T. J. Pittar, *Law and Practice regulating Merchant shipping in relation to its Registration* (n.d. [1882]), pp. 66–7.

RECORDS

EAST AFRICAN SAILING CRAFT

Contributed by Commander C. H. Williams, R.D., R.N.R.

The accompanying pen-and-ink drawings of sailing craft were made during the years 1927 and 1928. Many of the sketches were done hurriedly from a ship under way, so they cannot pretend to great accuracy of detail. The vessels were mostly small ones seen in the various East African harbours from Beira to Mombasa, or were on coastal passages. A few where dhows that had made fairly long voyages such as from the Persian Gulf to Zanzibar or the African coast. I understood from the master of one of these latter that he had made the passage from Muscat to Kilindini in 20 days. This would be an average speed of about 5 knots, which seems quite good.

Fig. 1

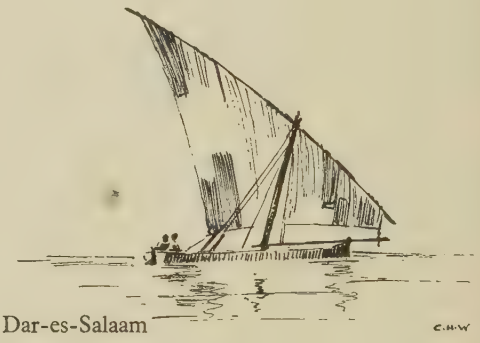


Fig. 2

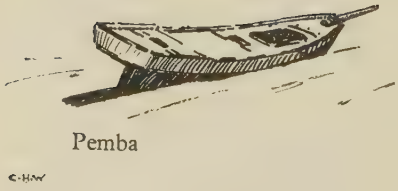
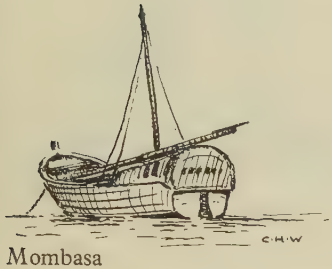


Fig. 3

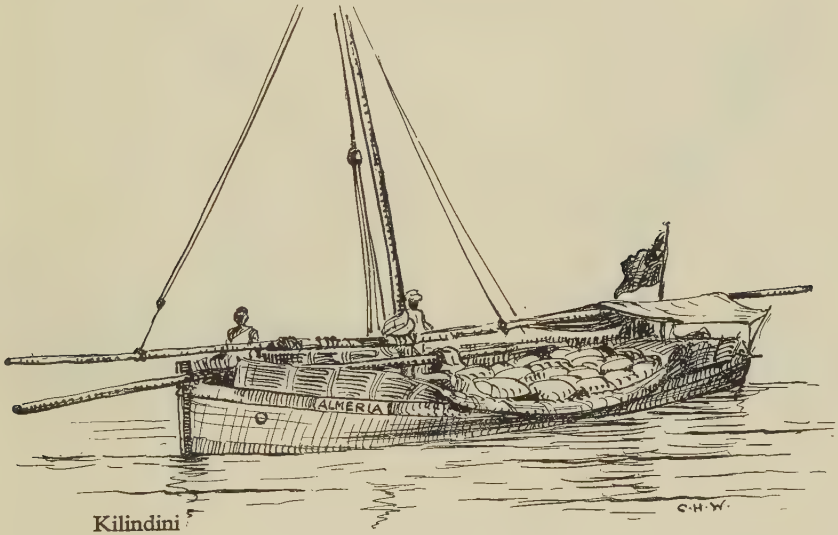
Fig. 4



Mombasa

Fig. 5

Fig. 6



Kilindini

Fig. 7

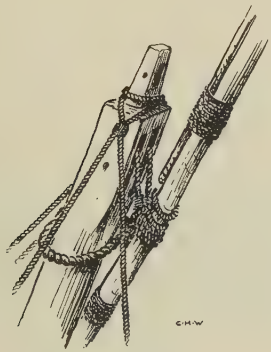


Fig. 8

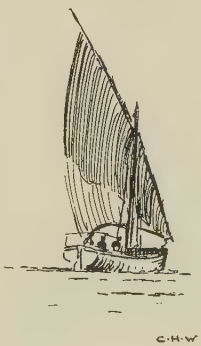
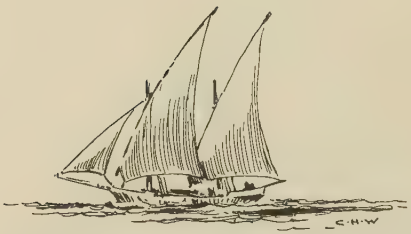


Fig. 9



Mozambique

Fig. 10

Dar-es-Salaam

Fig. 13

Zanzibar

Fig. 11

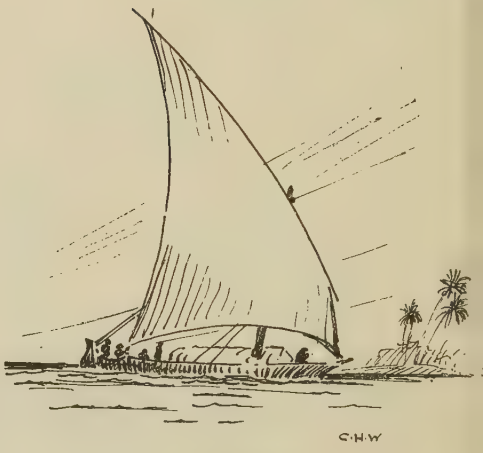


Fig. 14

Fig. 12

Dar-es-Salaam

Fig. 15

Beira

Fig. 16

Off Dar-es-Salaam

Fig. 17

Kilindini

Fig. 18

Fig. 19

Zanzibar

Fig. 20

The coasting vessels are fast sailers in a moderate to fresh breeze, but are not good at working to windward. Going about is no end of a 'panic', and always entails wearing round and thus losing some ground. In wearing they do not gybe the sail, but let go the sheet and carry it and the sail round forward of everything. H. Warington Smyth gives a good description of these vessels and their ways in his book *Mast and Sail in Europe and Asia*.

The sketch of the masthead detail of one of these coasting craft (Fig. 8) was made when she was alongside the ship I was in, at Mozambique. As can be seen, the eye of the starboard pair of shrouds was put on first, the same as it usually is in European ships. Whether this is also customary in Eastern vessels, or was just chance in this case, I do not know. Perhaps some readers of the *Mariner's Mirror* can say if this is so or not.

THE TRESCO VALHALLA

Contributed by Miss Julie du Boulay

The following notes correct and amplify the list of figureheads in the Tresco Valhalla printed in the November issue of the *Journal*:

Colossus. Man-of-war, 74 guns. Lost: 10 December 1798, during gale, Southern Wells Voyage: Lisbon for England. One hand lost.

Thames. Passenger steamer, of City of Dublin Steam Packet Co. Reg. ton. 500. Lost 4 January 1841, during gale, Brow of Ponds Reef. Voyage: Dublin for London. Four saved out of approximately sixty-six crew and passengers.

Boreas. Not definitely identified. Perhaps the '*Boreas*' lost without trace on a voyage from Liverpool for Exeter, between 5 and 24 February 1841.

Palinurus. Barque, of London, reg. ton. 300. Launched Whitby 1833. Lost: 27 December 1849, during gale, Lion Rock. Voyage: Demerara for London. Cargo: rum and probably sugar. All hands lost.

Mary Hay. Barque, of London, reg. ton. 258. Launched Peterhead 1837. Lost: 13 April 1852, during gale. Struck Steeple Rock twice, came off, and was wrecked finally on Bream Ledge. Voyage: Jamaica for London. Cargo: rum, sugar, pimento, log-wood, ebony, fustic, and cocoanuts. All hands saved.

Rosherville. Brig, of London. Lost: 3 March 1855, by fire in St Mary's Roads. Voyage: London for Jamaica. All hands saved.

Award. Ship, reg. ton 846. Originally of Quebec transferred to Liverpool. Launched Quebec 1859. Lost: 19 March 1861, during gale, Gweal. Voyage: Liverpool for New Orleans, in ballast. All hands saved.

Friar Tuck. Tea Clipper, of Liverpool, reg. ton. 662. Launched Aberdeen 1857. Lost: 2 December 1863, during hurricane, Newford Island. Voyage: Foo-Chow-Foo for London. Cargo: tea. All hands saved.

Salmon. Reg. ton. 177·89. Launched Quebec, 1859 as brigantine; 1869 rig changed to schooner. Lost: 15 January 1871, during gale, Mare Ledges. All hands saved.

Maipu. Barque, of Liverpool, reg. ton. 593. Launched Birkenhead 1865. Lost: 27 July 1879, during fog, Hell Bay. Voyage: Iquique, via Cork for Hamburg. Cargo: Saltpetre. All hands saved.

River Lune. Barque, of Liverpool, reg. ton. 1163. Launched Wallsend 1863. Lost: 27 July 1879, during fog, Isinvrank, Muncoy Neck. Voyage: Lorient for Ardrossan, in ballast. All hands saved.

Indipendenza. Barque, of Genoa, reg. ton. 795. Launched Sestri 1875. Lost: 24 September 1881, during fog. Struck Crim, came off, to be wrecked finally on Barrel of Butter. Voyage: Bristol to Rotterdam (from Valparaiso). Cargo: guano and horns. All hands saved.

La Gauloise. Barque, of Bordeaux, reg. ton. 332. Launched Bordeaux 1866. Lost: 15 January 1888, during fog, Ledges near Great Arthur. Voyage: Bordeaux for Porthcawl, Glamorgan. Cargo: Pit props. All hands saved.

Bernardo. Barque, of Genoa, reg. ton. 706. Launched Italy 1876. Lost: 11 March 1888, during gale, Back of Annet. Voyage: Alicante for Cardiff, in ballast. One hand saved, 11 lost.

Jane Owen. Schooner, of Carnarvon, reg. ton. 72. Launched Pwllheli 1860. Lost: 3 March 1889, during heavy squall, on Queen's Ledge. Voyage: Aberdovey for Devonport. Cargo: slates. All hands saved.

Serica. Fore and aft schooner, of London, reg. ton. 1736. Launched 1888 Sunderland. Lost: 24 November 1893, in heavy swell, struck uncharted rock in St Mary's Sound, and was run ashore on Woolpack. Voyage: Cardiff for Port Said. Cargo: Coal. All hands saved.

Sophie. Barque, of Fredrikstad, reg. ton. 533. Abandoned in sinking condition 14 December 1896. Sighted 15 December 1896, three miles north of Shipman Head, and towed into Scilly. Cargo: coal. All hands saved.

Falkland. Four-masted Barque, of Liverpool, reg. ton. 2676. Launched Liverpool 1889. Lost: 22 June 1901, during gale and thick weather, on the Bishop Rock. Voyage: Tacoma for Falmouth. Cargo: Wheat. Six lost, 22 crew and 2 passengers saved.

Lofaro. Barque, of Naples, reg. ton. 664. Launched Savona 1876. Lost: 2 February 1902, during gale, on Eastern Rocks off St Martin's Head. Voyage: Hamburg to Cardiff, probably in ballast. All hands lost.

GUN SALUTES

Contributed by Commander W. E. May, R.N.

When did the number of guns fired in saluting become standardized? Captain John Gascoigne gives in his log the following information concerning salutes fired by the *Alborough* during his period of command, 1728–34. At this time the ship was based on Charles Town for surveying duties.

King's birthday, 31 October	21 guns in 1728, 1732 19 guns in 1731, 1733
King's Accession, 12 June	19 guns in 1729, 1730, 1733 15 guns in 1731 (the *Happy* fired 13 in 1729)
King's Coronation, 12 October	21 guns in 1728, 1730 19 guns in 1732 15 guns in 1731
Queen's Birthday, 2 May	17 guns in 1730
Prince of Wales' Birthday, 15 January	19 guns in 1734 17 guns ni 1733 15 guns in 1731, 1732 (the *Cruiser* and *Happy* fired 11 each in 1731)
Gunpowder Plot	15 guns in 1732, 1733 11 guns in 1730

In the years not shown above the ship was either at sea, surveying or refitting.

Other occasions given are:

15 December 1730	Arrival of Governor Robert Johnson at Charles Town. 15 guns
26/27 March 1731	Governor Johnson dined aboard *Alborough*. Saluted with 17 guns on arrival, 19 guns on departure
21/22 May 1732	Governor Woodes Rogers of Providence dined on board. 11 guns on arrival, 11 guns on departure
3 May 1733	M. Le Jeune, French Commandant of part of Hispaniola. 11 guns
27 March 1734	Several merchant vessels saluted *Alborough* on her departure. She returned 11 guns
3 April 1734	James Oglethorpe, Trustee for establishing the colony of Georgia, came aboard for passage to England. 15 guns
6 May 1734	*Alborough* sailed for England. The Governor saluted her with 15 guns which was returned gun for gun
23 June 1734	Admiral Sir John Norris, Commander-in-Chief. 17 guns
25 June 1734	Sir George Watson, Admiral of the Blue. 15 guns Thomas Kempthorne, one of the Commissioners. 11 guns

The *Alborough* returned any salutes to her fired by merchant vessels, always firing 2 guns less. In this way the following numbers of salutes were returned:

Eight merchant vessels fired 9 guns each;
Eighteen merchant vessels fired 7 guns each;
Eighteen merchant vessels fired 5 guns each;
One merchant vessel fired 3 guns.

This variety in the numbers of guns fired, especially for the anniversaries, started an investigation into the regulations on the subject. Salutes have often been referred to in the *M.M.* but no clear exposition ever seems to have been made. The following may therefore be of value as an outline.

In Boteler's Dialogues it is stated that an odd number of guns is always fired for a salute. An even gun salute is only fired for the dead.

An early, if not the earliest, set of rules on the subject was approved by James II by an Order in Council dated 13 July 1688. They are entitled 'An Establishment Touching Salutes by Guns' and had been drawn up on 22 June. An object was evidently to save powder, as among other instructions is one forbidding the firing of salutes during the drinking of healths and others regulating the frequency of salutes to the same officers.

Salutes were to be fired on the anniversaries of the King's birthday and coronation, and on Restoration Day (29 May), the number of guns being as 'shall be judged proper'.

The Royal Family were to be saluted on embarking or landing with a number of guns which was to be at the discretion of the Commander-in-Chief.

Salutes between naval officers depended both on the rank of the officer saluted and on the rate of the vessel saluting. They varied between 21 for the Lord High Admiral when saluted by a 1st rate to 3 guns for a captain saluted by a 6th rate. Flag officers returned with four less and private ships with two. A merchant vessel saluting was returned with six less. All salutes were odd numbers of guns. These were the main provisions of this Order.

It is evident that Gunpowder Plot was added to the list of anniversaries for there is a case of such a salute being fired in 1716 quoted in the *M.M.* Vol. III, p. 62.

The relevant chapter of *Regulations and Instructions relating to His Majesty's Service at Sea.* for 1731, which grew into our modern Q.R. & A.I., is obviously based upon the Order in Council of 1688. The number of guns to be fired for royal salutes was still at discretion and those for anniversaries, to which the Queen's Birthday and Gunpowder Plot were added, were to be 'as the Chief Officer shall think proper, not exceeding 21'.

Salutes between officers now depended on their relative ranks and not upon the rates of the ships. The largest salute was now that of 17 guns from a Captain to an Admiral who was Commander-in-Chief and the smallest 13 from a Captain to a Vice- or Rear-Admiral, or between two Flag-Officers neither being Commander-in-Chief.

These regulations were still unchanged in the 13th edition of the Regulations, dated 1790.

In the 1806 edition royal salutes but not anniversary salutes have settled at 21 guns.

In 1808 the question of who fires the salute ceases to be relevant, though it does affect return salutes which are four less to a Captain and two less to another Flag-Officer. The salutes to naval Officers are 17 for an Admiral Commander-in-Chief, 15 for other Admirals and 13 for Vice- and Rear-Admirals.

In the 1833 edition 21 guns are specified for the anniversary salutes and salutes to Flag-Officers are now graduated from 19 to the Lord High Admiral through 17 for an Admiral of the Fleet, 15 for an Admiral, 13 for a Vice-Admiral, 11 for a Rear-Admiral or Commodore 1st Class to 9 for a Commodore 2nd Class. These regulations were amended by a circular dated 4 July 1833 which for the first time omits Gunpowder Plot from the anniversaries. Return salutes were now to be according to the rank of the junior Officer and came down to 7 for a Lieutenant in Command.

By the date of publication of the Queen's Regulations of 1844 the Restoration anniversary had been dropped and the two Commodore's salutes reduced to 9 and 7 guns respectively. By the 1879 Regulations both classes of Commodore got 9 guns.

Two other logs of Captain John Gascoigne give us interesting details of salutes fired in the case of death. He was at Spithead in the *Tryall* on 18 July 1727 and notes:

'At 1 pm notice being sent me (by S^{r} Isaac Townsend Kn^{t} Commissioner of his Majes^{ty} Navy at Portsmouth & Command^{r} in Chief of his Maj^{ts} Ships at Spithead & in Portsmouth harbour) of the Death of his Maj^{y} King George & that King George the Second was proclaim'd at Portsmouth The Sloops Colours were Struck half Staff & fired 14 Guns by the half minute glass, upon which the Dutch Rear Adm^{l} Struck his Flagg (as well as his Ensigne & Jack as did also his Squadron their Colours) half staff & fired one & Twenty Guns each at a Minute space asunder, we keep our Colours down till the Dutch had done firing their mourning Guns, then they were hoisted & all our Extraordinary Colours Spread & we fired Fifteen Guns for the Accession of King George the Second to the throne of these Realms. the Dutch Adm^{l} & his Squadron Spread all their Colours & fired one and Twenty Guns each.'

The *Tryall* left England in August and, arriving at Port Royal, Jamaica, on 25 September, apparently brought the first news of the death of the King. On 28 September Captain Gascoigne notes:

'At Sun-rising al the Squadron hoisted their Colours half Staff & each Ship fired Twenty Guns in Funeral Ceremony for his late Maj^{y} King George the first (this Sloop did not fire because I had perform'd the Ceremony on this Occasion at Spithead).'

On 29 September (i.e. the afternoon of the same day):

'At 1 pm^{m} the whole Squadron hoisted their Colours & fired one & twenty guns each upon the proclaiming his present Maj^{ty} King George the Second.'

In the West Indies Captain Gascoigne was involved in the funeral ceremonies of two Commanders-in-Chief. On 1 October 1727:

'Every Cap^{n} in the Squadron in his Pinnace attended the Corpse of Admiral Hosier from the Bredah to the Happy sloop (which lye's near the Cays) as did also a Commission Officer from each Ship in their Yawl the Boats Rowing in two Lines the Van's of which were on each Quarter of the Comadore—In the time of the procession each Ship of his Maj^{ty} fired Twenty Guns by the half minute Glass, According to y^{e} Seniority of the Captains.'

In the log of the *Greyhound*, to which ship deaths among his senior Officers had promoted Gascoigne, we read on 9 May 1728:

'At 7 pm^{m} Dyed the hon^{ble} Edward Hopson Esq^{r} Vice Admiral of the Blue Squadron of his Maj^{tys} Fleet and Commander in Cheif of all his Maj^{ts} Ships in the West Indies at sun rising His Flagg was hoisted half staff, as were all the Colours of the Squadron.'

On 10 May:

'At 2 pm^{m} unmoored at ½p^{t}. 3 the Leopard (having made the signal to weigh) fired Twenty half minute Guns in Funeral Ceremony for the Admiral Every other Ship following according to Seniority of the Captains: as soon as the Squadron had done the Admiral's Flag was Struck & the Squadron hoisted their Colours. The wind being at WSW till ½ p^{t}. 8 then got under Sail w^{h} the Leopard who Carries the Admirals Corpse preserv'd in Rum to Jamaica & Capt^{n} Grays Letters of Advice of the Admiral's Death to Capt^{n} S^{t}. Lo whose Orders for returning to Great Brittain was sent by the Lenox (about three Weeks since) & I am to Endeavour to meet him in Dona-Maria-Bay w^{h} Duplicates of the Letters sent by the Leopard least Mr. S^{t}. Lo should be gone from Jamaica.'

The *Greyhound* did not meet Captain St. Lo at sea and finding him with his broad pendant hoisted when she arrived at Port Royal on 23 May she saluted it with fifteen guns.

NOTES

THE INCONSTANT MERCURY

In 1810–11 the Treasury was anxious to obtain as many gold dollars as possible for the use of the army in Spain. Vera Cruz, in Mexico, was one of the principal sources and H.M. ships which happened to be in the vicinity were told to go in to collect what they could from the British agent there. Thus the *Helder*, Captain John Serrell, called at Vera Cruz on her way home and collected 169,898 dollars, packed in 157 boxes, arriving at Spithead on 4 December 1810.

There was, however, great difficulty in cashing bills at Vera Cruz and other methods of raising money were considered. One way seemed to be to export quicksilver to Vera Cruz, for quicksilver was in great demand for use in the refining of silver in the mines of Mexico. A Mr Ignatius Palyart was employed by the Treasury to purchase the quicksilver and expended just over £25,000 in obtaining 152,063¼ lb. which it was hoped to sell at 100 dollars the quintal. The Spanish government was informed of the project and asked to issue the necessary instructions to the authorities in Mexico to allow it to be imported.

The Admiralty was asked to provide transport and detailed the *Inconstant*, Commodore E. W. C. R. Owen, which had just finished a refit at Portsmouth and had moved out to Spithead on 31 December 1810. The army was asked to carry the quicksilver to Portsmouth but the Royal Waggon Train could only provide transport for 10 tons. To save time it was sent down by hired waggon at a cost of £6 per ton.

In the *Inconstant* space was cleared on each side of the pump well for stowing the mercury and it was embarked between 13 and 20 January, being packed in 1182 iron bottles and 400 casks of varying sizes. That in the casks was contained in skin bags which were not very secure. One cask was found to be leaking when received and others became defective during the voyage. Before being landed the spilt mercury was, however, successfully collected into forty stone bottles.

The *Inconstant* sailed on 24 January 1811 under secret orders from the Admiralty dated 16 January, and arrived at Vera Cruz on 16 March. She had chased a suspicious ketch on 27 January and had passed Madeira on 8 February and Dominica on 28 February. On 6 March she met the *Naiad* off Jamaica, sending letters home by her. A copy of Owen's letter to the Admiralty reporting his proceedings was sent by the pilot boat *Sarah* of Port Royal, Jamaica.

At Vera Cruz there was a hitch. Thomas Murphy, to whom the quicksilver had been consigned, was away and his brother Lorenzo reported that no communication had been received from the Spanish government about it. It could not be landed without authority from the Viceroy who was in Mexico City. Letters were written seeking his approval for landing the consignment and the Commodore took the opportunity to write to the Viceroy excusing himself from making the long journey to wait upon him.

The permission arrived and on 8 and 9 April the mercury was landed.

Murphy wrote to the Treasury explaining the difficulty in which he was placed. Quicksilver was a prohibited import into Mexico and no orders had been received from Spain to make a special case. Moreover large consignments had recently been received from Europe while the demand had dwindled greatly owing to an insurrection which had brought work at the mines virtually to a standstill. The insurrection had almost depleted the Mexican Treasury so that the Viceroy claimed that he had no funds available to pay for the mercury, nevertheless he was prepared to help an ally by offering 63 dollars a quintal for it. Murphy did not feel that he could agree to such a sacrifice. Meanwhile the quicksilver remained in his warehouse and he implored the Treasury not to embarrass him by sending any more.

By June the state of affairs was even worse. Long expected despatches had arrived from Spain and far from containing any instructions concerning the *Inconstant*'s quicksilver they brought a decree that all mercury landed in Mexico from foreign bottoms should be confiscated. All government departments, except that of the mines, were opposed to any relaxation of the law and an import duty of 32% was being claimed on an invoiced value increased by 12%. The decree permitting free importation of quicksilver had never been meant to apply to importation in foreign vessels. Murphy feared that he might have to send the whole lot back to England but was loath to adopt this measure, if it could possibly be avoided, for fear of the wrath of the inhabitants who knew that the Mexican government had less than a year's normal consumption available and in troublous times this was none too much. Murphy must of course have had his own position to consider. The Treasury asked the Marquis Wellesley to request the minister at Cadiz to seek the co-operation of the Spanish government, but what was the end of the matter I have been unable to discover. The *Inconstant* was well out of it, having sailed for home on 23 April and the Treasury records seem to be silent on the end of the story.

To return to the *Inconstant*, it had, on her arrival, been represented to Owen that the anchorage off the Isla de Sacrificios would be more healthy than that at Vera Cruz. He did not believe that there could be anything in it but thought that if he moved there the men would be less open to temptation and discipline would be better, so shifted berth 2 days after his arrival.

The Commodore congratulated himself on the good health of his ship's company, in spite of an epidemic raging ashore, until on 11 April the third lieutenant, Henry Jenkinson, fell ill, to be followed in quick succession by the first lieutenant, a seaman, the lieutenant R.M., a midshipman and a private. The marine officer refused to take the medicine prescribed for all the sufferers and died after 5 days and was buried ashore.

By 23 April, when the *Inconstant* left, the other five had recovered and the epidemic seemed to be over, but on 26 April it broke out again and the officers, midshipmen and servants began to down at the rate of two or three a day. About 10 May contagion spread forward and the sick-list swelled rapidly until on 17 May they encountered a strong, cold, north-easterly wind. This seems to have checked the malady, for thereafter there were few fresh cases and by the middle of June it was over.

In all there were seventy-six cases and twenty-seven deaths. They included three lieutenants who recovered, the master and a master's mate both of whom died, two marine officers, one recovering, nine midshipmen of whom three died, the purser and clerk who survived and the carpenter and assistant surgeon who did not. Of twenty-seven cases among their rank and file the Royal Marines lost two sergeants, a corporal, a drummer and eight privates.

Owen attributed the prevalence of the disease among those berthed aft to 'exposure to the effluvia which in spite of all care continually arose from the Spirit Room by the decomposition of the Spirits in the extreme heat', and recommended better ventilation for spirit rooms in frigates. He commended the surgeon, Lancelot Armstrong, and his staff for their unremitting zeal and devotion to duty. Among those told off to assist him there were four cases, besides the assistant surgeon, and like him two of these died.

Besides the deaths from this epidemic an able seaman died of consumption and two were drowned, one on the voyage out and the other on the way home.

The ship's company seems to have been an unruly one. Between 6 and 18 April four able seamen and eight ordinary seamen ran. The first two desertions occurred from a boat and Owen

immediately sent an officer to solicit aid from the Governor in recovering them. He was told that the Governor was asleep and unwell but a Secretary promised assistance. Murphy was asked to tell the police that rewards would be paid for the return of the men. When more disappeared another officer visited the Governor who maintained that he had never heard of the first complaint. Merchant ships in harbour were searched without success and it was known that the local merchants were offering large rewards to men who would sign on in merchant vessels loading for Havana. Owen addressed yet a third request for assistance to the Governor, pointing out that he had known where some of his men were hidden but had forborne sending an armed party to apprehend them as to do so would be a discourtesy to a friendly nation. The result had been that the men had now got away and their success had been an encouragement to further desertions. Now at last the Governor bestirred himself and when three more men tried to swim from the ship on 21 April they were intercepted by soldiers who returned two of them two days later and wounded the third so badly that he had to be left behind in hospital.

Owen heard that a British subject, John White, was incarcerated in the castle at Vera Cruz and wrote to the Governor on 29 March asking for his release. There was no reply but on 1 April the Governor addressed a letter to the Commodore asking if he could spare any arms as the local troops needed them badly. Owen thought that he ought to do what he could to help so supplied ten sets of marine's and fifteen sets of seamen's muskets and equipment together with five pairs of pistols, fifty swords and twenty strong pikes. He took the opportunity of again pressing for the release of John White and this time his request was immediately granted. The question of payment for the arms was left to the home governments to settle and on 30 July the Treasury authorized a payment to the Ordnance Department for these stores.

On 17 and 20 April the *Inconstant* embarked 180 cases of specie, said to contain 518,4[illegible] dollars, 5½ reals. On arrival in England there was some delay in giving orders for its landing so that the compartment where it was stowed was not actually opened until 24 June, thirteen days after the arrival of the ship at Spithead. In the meantime on 13 June the ship had received orders to refit for further service and the ship had been crowded each day with caulkers and the sailors' women. When the specie was at last landed it was found that one box had been broken open, one of the three bags it contained ripped and some of its contents abstracted. What had happened was that some large blocks, which had been stowed against one side of the compartment, had been landed. Someone had been able to make a hole and to stretch in an arm sufficiently far to force open a box with a marlin-spike and to rip a bag. As soon as it was found to be damaged the box was weighed and found to scale only 174 lb. compared with others of 196 and 202 lb. There was no indication on the box to show what it ought to contain. A few days later the box was examined by Mr W. Fisher on behalf of the Treasury and it was found that the two intact bags in it contained 1000 dollars each and the damaged one 598. At the same time Fisher examined two other boxes in which he found five bags each containing 1000 dollars and one with 1001¼ dollars in worn coins. Apparently the bags had been packed by weight, but the various ideas how much there should be seem rather strange. One hundred and eighty cases with 3000 dollars each should make 540,000 but Owen was told he was loading 518,413 dollars 5½ reals and the Treasury seems to have expected to receive 548,415 dollars.

Besides the gold the *Inconstant* brought home some passengers. It was very difficult to get from Mexico to Europe at that time and Owen acceded to a request from Murphy to take them on board. The Commodore gives the following passenger list, but it is possible that some of his spelling of names is incorrect. The names he gives in his letter to the Admiralty do not always agree with those in the Muster Book, but spelling of foreign names in such records is often bad.

Don A. Louizabal	A Priest, Deputy to the Cortes from the province of Guatimala.
Ignaiso Battes	An Officer I believe of the Provincial Corps.
Pablo I. Mattate J. M. Robleda Francisco Fernandez	Nephews to the Deputy and together with the Officer going with him to Cadiz.

The above have two servants.

Don Francisco Fazoaza	Younger brother of the Marquis Fazoaza now in England.
Two servants	
Don I. Antonio Lagune	A merchant of Mexico, a friend of Mr Murphy
His servant	
Don Francisco Menoz	A respectable gentleman of Mexico who I understand is seeking a residence in England.
His Servant	
Don A. Lopez	A friend of Don Menoz he embarked at the last moment in consequence of one of the persons not arriving and I have no further knowledge of him than Mr Murphy's recommendation.
M. R. Fernandez	A dealer in goods, or as there called merchant, of respectable character but not extensive dealings; his voyage is for some mercantile speculation.
John Philips	A native of Prussia a cabinet maker, the climate disagreed with him and he proposes to settle in England.

The *Inconstant* having left Vera Cruz on 23 April arrived at Spithead on 11 June, though according to the Muster Book the passengers were not landed until 14 June.

Don Louizabal subsequently gave the Commodore a gold watch with the inscription in Spanish 'To the illustrious E. W. C. R. Owen with deepest gratitude from A.L.'.

I have not succeeded in ascertaining whether Owen received freight on the specie at the usual rate or whether it was stopped because of the deficiency. As no mention of it can be traced it must be assumed that he received the customary 10% of the value. He put in a claim in respect of the mercury and was disappointed when the Treasury, after consultation with the Admiralty, only awarded him £125, the amount being calculated on the value at the same rate as for gold. Owen tried unsuccessfully to get the award increased and in giving their final decision the Treasury told him that they regretted 'from accidental Circumstances the Voyage to Vera Cruz was not so beneficial to you as a more considerable importation of Specie on the Public Account would have rendered it'. The payment was made out of 'Army extraordinaries'.

After this interlude the *Inconstant* returned to her duties off the coast of Holland. W. E. MAY

Note: Authorities consulted in the investigation, which originated with a request to the National Maritime Museum to identify the A.L. of the inscription on the watch. All manuscripts are in the Public Record Office. *English Goldsmiths and Their Marks*, Sir Charles J. Jackson, 1921; *A Naval Biographical Dictionary*, William H. O'Byrne, 1849; *Inconstant's* Log-Book, Adm. 51/2482; *Inconstant's* Muster Book, Adm. 37/2582; Admiralty Secret Orders, Adm. 2/1371; Admiralty In-Letters from Captains, Adm. 1/2260; Treasury Digest of In-Letters, Index 8593; Treasury In-Letters, T. 1/1210; Treasury Minutes, T. 29/109 to T. 29/113; Treasury Out-Letters, T. 27/68, T. 28/8.

THE TRESCO VALHALLA

Further to Mr E. W. Bovill's note on this subject in *M.M.* Vol. 44, pp. 333–4 (November 1958), a duplicated booklet was issued by the Isles of Scilly Museum Committee which gives many particulars of local wrecks, including most of those from which figureheads were obtained. This was by Charlotte Dorrien Smith, and entitled *Shipwrecks on the Isles of Scilly*. Informative though it is, there is room for further research and amplification in many cases, and one hopes that Mr Bovill's plea will be answered. A few notes from my own records are appended.

1. *Polinarus* is fairly certainly *Palinarus*. A contemporary Bristol newspaper says she was of Exeter, Frederick Geare, master, and bound from Demerara for Exeter, laden with rum and sugar, when lost with all hands. Presumably she was the barque of 300 tons, built at Whitby in 1833, and formerly of London, which appears in the *Lloyd's Register* of the period.

7. *Gilded Salmon*, should be simply *Salmon*. She was a locally owned schooner of 178 tons, built as a brigantine at Quebec in 1859. Wrecked on Mare Ledges, Tresco, 15 January 1871.

12. *Jane Owen* is unlikely to have been built in St Mary's, and more likely to be the schooner of Carnarvon, built at Pwllheli in 1860.

14. *Flakland* should read *Falkland*, the iron four-mast barque of Liverpool owned by MacVicar and Marshall.

15. *Volunteer* was another locally owned coaster, then a ketch, built at Aberystwyth in 1861. She was wrecked on the Culvers, upper Bristol Channel, on 27 January 1911 when bound from Newport for Scilly with coal. Her figurehead was no doubt salved by her owners and brought home.

GRAHAME FARR

EXPERIMENTAL NAUTICAL RESEARCH: THIRD MILLENNIUM B.C. EGYPTIAN SAILS

Part of the difficulty in appraising the ancient evidence for ships and shipping is the inability of the scholar to put himself back into the contemporary conditions of the times. This is particularly true of ancient sailing vessels with primitive rigs which went out of existence thousands of years before the time of Christ. Even the most capable modern sailors and marine architects are completely unable to estimate the performance of such craft. A case in point concerns the sailing ships of the Old Kingdom of ancient Egypt, a period covering the Third to the Sixth Dynasties, or from about 2660 to 2180 B.C. according to the present chronology of Professor Richard A. Parker of Brown University, U.S.A.

We have no evidence of which I know for sailing vessels of the Third Dynasty, but there are quite a few for the Fourth Dynasty (*c.* 2610–2500 B.C.) which show the typical rig of the early

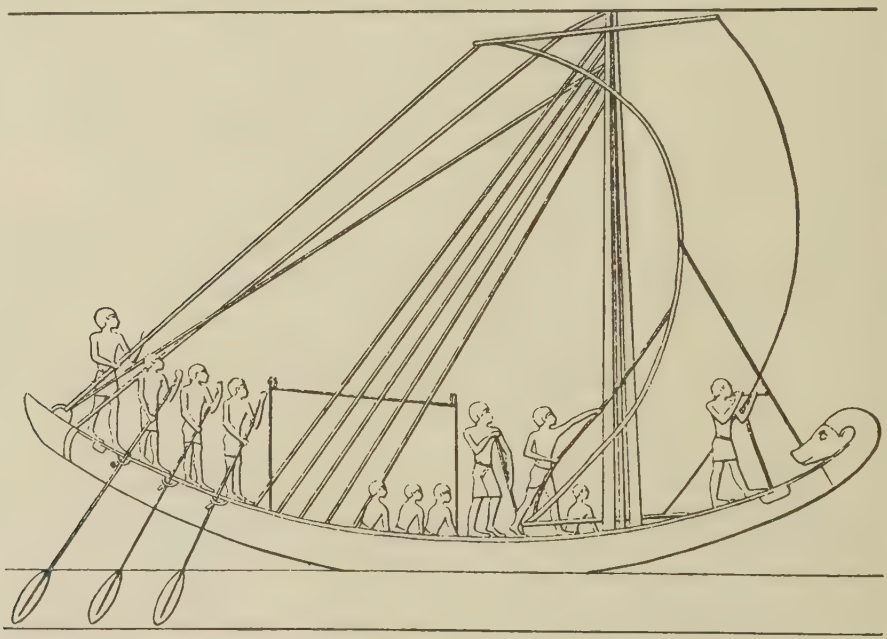


Fig. 1. Egyptian sailing boat of the Fourth Dynasty (*c.* 2610–2500 B.C.). The artist has shown the sail in an impossible position with the boom behind the mast, but with the aft edge of the sail in front of it. The man standing just aft of the mast holds a line usually described as a 'bowline'; it is probably a line for gathering in the sail. The water-line has undoubtedly been exaggerated (after Borchardt, *Das Grabdenkmal des Königs Sahu-re*).

part of the Old Kingdom (Fig. 1). The sail is a very tall square sail, spread between a yard and a boom, and hung from a sheer mast. But more important is the fact that the mast is placed in the forward part of the vessel, well forward of the centre of lateral resistance of the hull. Such was also the rig of the famous ships of King Sahure (*c.* 2490–2476 B.C.) of the Fifth Dynasty which are known to have sailed from Egypt to Byblos on the Syrian coast (Fig. 2). Opinions differ as to how well such boats could utilize a wind. Captain Sølver, a man with considerable sailing experience, flatly denied that such vessels could do anything but sail dead downwind.(1) On the other hand, statements have been made to the effect that such boats could sail with a beam wind, because of pieces of rope which were identified as bowlines.(2) It could be anticipated in advance that the correct answer probably lay somewhere between the two extremes of (1) using the wind only dead downwind, and (2) of bringing it up as high as the beam. It was my intent to determine experimentally how far such rigs could sail away from the path of the wind.

Fig. 2. One of Sahure's ships (*c.* 2480 B.C.) of the type which sailed from Egypt to the Syrian port of Byblos. These ships used a tall rectangular sail set far forward. This boat is about 45 ft. overall (after Borchardt, *Das Grabdenkmal des Königs Sahu-re*).

RIG. The boat used for the experiments was originally built by the author as an outboard-powered boat. It had an almost flat bottom at the stern, and was 13 ft. 8 in. overall with a maximum beam of 5 ft. 1 in. The keel was 2 in. wide but projected only $\frac{1}{2}$ in. below the planking. The boat drew about 8 in. of water forward and 4 in. after when loaded. The approximate lines of the boat are shown in Fig. 3. The mast consisted of a single pole with a rectangular cross-section $1\frac{5}{8}$ in. $\times 3\frac{5}{8}$ in. No stays or shrouds were used. The mast was set in a socket on the keel and made fast to a bench at the deck line. A 4 ft. 8 in. $\times$ 8 ft. 6 in. sail with about 40 sq. ft. was hung from a yard and also made fast to a boom (Fig. 3). Actually the yard and the boom were split and then fastened together after the sail was made fast to one half so that the sail was perfectly straight where it joined the yard and the boom. In operation the boom was first made fast to the base of the mast, and the sail was raised by a single halyard rove through an eye at the top of the mast. When the halyard was taken up, the sail flattened out like a sheet of paper. No bolt rope was used on the edges of the sail, which was made out of a cotton drill weighing about 5 ounces per square yard. Even when the sail was trimmed into the wind the leading edge could be kept very straight. This was a surprise, as I expected the edge to deflect noticeably to leeward when set into the wind. The sail was controlled completely by two braces on the yard and two sheets on the boom. It would have been impossible to set the sail into the wind without these four lines, and both windward and leeward braces and sheets had to be used to set the sail correctly. The rudder was set $7\frac{1}{2}$ in. to the port of the centre line of the boat, and an outboard engine was hung on the starboard side to move the boat back up wind. When under sail, the motor was swung up out of the water. The boat was originally fitted for the experiments with a rudder with a submerged area of 2·5 sq. ft., but initial tests indicated that this would not bring the boat into the wind appreciably, so 2 more square feet were added to the original rudder making a total of 4·5 sq. ft. (Fig. 3). All actual determinations were made with the large rudder.

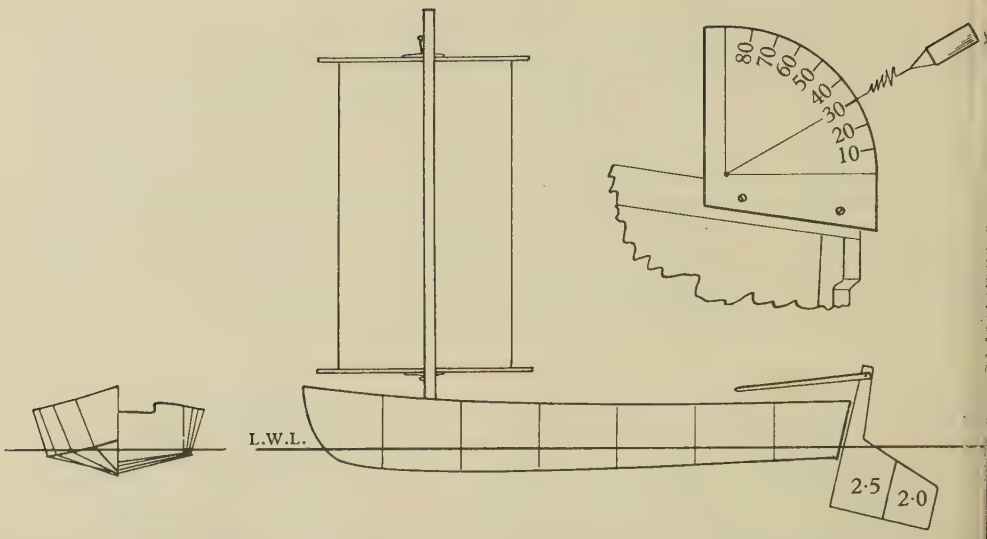


Fig. 3. Lines of experimental boat with sail plan. The boat was 13 ft. 8 in. overall with a wetted water-line of about 13 ft. The numbers on the rudder indicate the initial rudder of 2·5 sq.ft. submerged area and the addition which made the actual rudder used in the experiments 4·5 sq.ft. A detail of the starboard leeward slip-gauge is shown. The load water-line indicates that approximately used in the experiments.

A 4 in. liquid compass was set with the indicator line on the fore-and-aft line of the boat. A leeward gauge was set on each stern quarter to measure the degrees that the boat was slipping to leeward. These gauges consisted of three-cornered plywood boards with a circular curve along the after outside edge, which was marked in degrees from 0 to 90 (Fig. 3). The 0° mark corresponded with the fore-and-aft line of the boat, and of course the 90° mark was at right angles to this, or athwartship. Lines were attached at points representing the centres of the circles on which the degrees were marked. Twenty feet of line was provided, and at the outboard end of the line a tin can with open ends was fixed. The experimental procedure consisted of setting a predetermined compass course with the wind coming over the quarter at a fixed angle, and then measuring the degrees which the boat was slipping to leeward (Fig. 3).

RESULTS. Before any slip determinations were made on a particular day, the direction of the wind was determined. This was done by anchoring the boat from the stern, and allowing the boat to pull downwind until it was lined up with the direction of the wind. The compass was then read. After a series of slip determinations were made, the direction of the wind was again determined to make sure that it had not shifted. In making a series of determinations the boat was set on a compass course held to the nearest round number, as 210°, and the boat was held on this course until the sail could be trimmed and the angle of slip to leeward measured. Then the course was changed, and the measurements repeated. The boat was first worked up as high as it could be pushed on one tack, and then it was worked around to the other tack, measurements being taken at regular course intervals. In every determination tabulated below the sail was trimmed into the wind as much as possible. The importance of this was determined at the start. When the boat was once headed 30° away from the path of the wind, it slipped to leeward a full 15° with the sail set square to the wind. But the moment the sail was trimmed into the wind, it did not lose any leeway. All the determinations were made in Narragansett Bay, Rhode Island, U.S.A., in winds of from 10 to 15 m.p.h. The following is a tabulation of the average results from a number of determinations made on different days in different sea conditions (roughness).

Heading away from path of wind (=angle of wind over quarter)	Degrees slip to leeward	Actual course away from wind
0 (wind dead astern)	0	0
30	0	30
40	10±2	30
50	20±2	30
60	25±2	35
85	30–35	50–55
90 (wind abeam)	35–40	50–55
100 (wind forward of beam 10°)	45–50	55

It will be noticed that the accuracy of readings of slip to leeward decreases as the boat is pushed the maximum away from the wind. The slip has been plotted in Fig. 4, and it will be seen that the curve through the data is sinuous. Up to 30° away from the wind there is no slip. Then as the boat is pushed past this point, the slip increases at a uniform rate until the boat is 50° away from the wind, at which point its rate of increase decreases. But past 90° it turns up sharply. This rapid increase can be easily explained. At 100° the rudder is turned over 60° off the centre line of the boat, so it actually starts to act as a sea anchor, slowing down the boat. As the boat slows down due to the rudder drag, the leeward component becomes greater in relation to the forward component, thereby increasing the slip sharply. If the boat could be pushed past this point and if the rudder could completely stop the forward motion, obviously the boat would go 100% to leeward. But the boat could not be pushed past 100° away from the path of the wind. Heeling the boat obviously had an effect on the leeward slip, as it increased the area of lateral resistance of the hull. In one instance where the slip was 40°, this was decreased to 20° by heeling the boat well over to leeward. But since the ancients obviously could not (and did not) heel their much larger boats, all the determinations tabulated above were made with the boat as level as possible.

Points were taken off the smooth curve of the slip (Fig. 4), and these were subtracted from the degrees the boat was headed away from the wind to get the actual course the boat sailed, which is plotted in Fig. 5. Here we see that the boat goes where it is pointed up to 30° away from the wind. From 30–50° the boat remains at 30°. Then past 50° the actual course increases gradually to about 55° at a course setting of 90°. From 90–100° it remains constant again, and then above 100° it would fall off sharply with the physical equipment used in the experiments. These results are shown graphically in Fig. 6, which should be self-explanatory.

CONCLUSIONS. As has been mentioned, a rudder of rather large proportions was used on the experimental rig. Unfortunately I did not determine how far the smaller rudder would push the boat away from the path of the wind. But this information would have been useful. At any rate the smaller rudder had a submerged area of 2·5 sq. ft., and the larger one 4·5 sq. ft. Now the three steering oars of Sahure's ship can be considered as having an area of about 5 sq. ft., assuming that the boat was about 45 ft. overall by the size of the men (largest taken for about 5 ft. 6 in.). The wetted water line of this boat is just about two-thirds of the length, or about 30 ft. Therefore the ratio of the rudder area of Sahure's ship to the wetted hull length is about 5 : 30 or 0·17. In the experimental boat the wetted water-line was about 13 ft., so the ratio of rudder area/wetted hull with the small rudder was 0·19, but 0·35 for the large one actually used in the experiments. This was just about two times the size of Sahure's effective rudder.

The experimental boat had very little overhang, and if it were compared with Sahure's 67% wetted water-line, the experimental boat represented a boat 19 ft. long. Sahure's boat might have had a 25 ft. high sail, compared to the experimental sail height of 8·5 ft. This would give a sail height/wetted water-line of 0·83 for Sahure's boat and 0·65 for the experimental rig, so that the experimental sail was proportionally smaller than Sahure's. However, this was balanced to an unknown degree by the fact that the experimental boat did not have the great overhang at each end of Sahure's boat. The smaller sail would decrease the forward component derived from the pull of the sail, but the lack of overhang would decrease the leeward component due to the

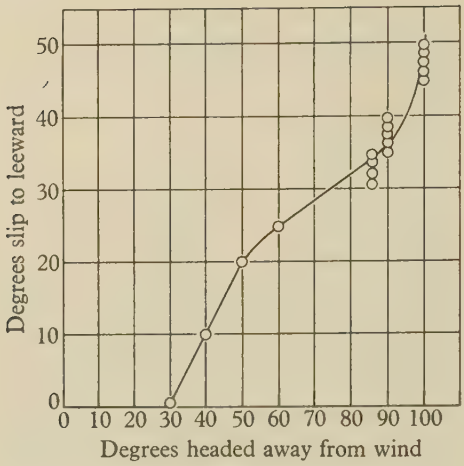


Fig. 4

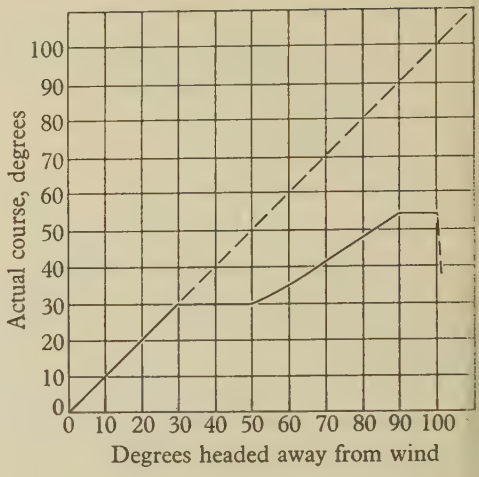


Fig. 5

Fig. 4. Graph showing the degrees slip to leeward and the degrees the boat was headed away from the downwind path of the wind.

Fig. 5. Graph showing the actual course of the boat and the degrees the boat was headed away from the path of the wind.

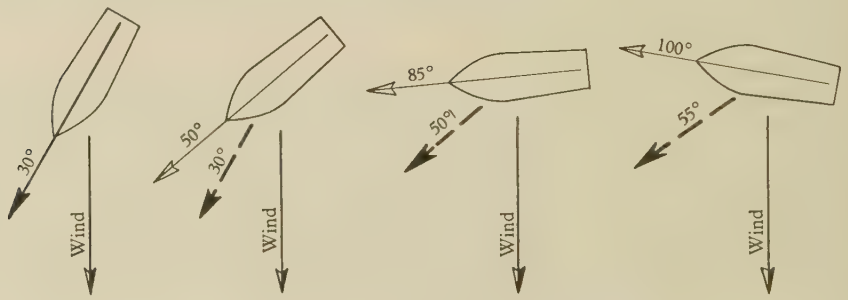


Fig. 6. Graphical representation of the actual course of the boat as a function of the amount the boat was headed away from the downwind path of the wind.

force of the wind on the hull. Therefore the two could cancel each other out to a certain extent. Sahure's mast was about one-third of the way from the bow, and in the experimental rig it was one-quarter of the way. But if the theoretical overhang were added to the experimental boat, it placed the mast one-third of the way from the imaginary bow. Thus the mast was about in a comparable position. In the Fourth Dynasty boat shown here the mast is only three-tenths of the way back from the bow (Fig. 2), but the sheer of this boat is probably exaggerated considerably.

I feel very certain with the evidence at hand that the Egyptians of the early part of the Old Kingdom could not get their sailing craft anywhere near 50° away from the path of the wind with the steering-gear they used. Fig. 5 shows that up to a heading of 50° an actual maximum realized course of only 30° is obtained. Therefore, we can say with a fair degree of certainty that the Egyptians did not ever realize more than 30° away from the wind with these tall rectangular sails. Since nothing was gained between 30° and 50°, we can safely assume that they were satisfied if they headed their boats 30° away from the wind. It is felt that the figure of 30° is accurate

within at least 5° or so either way. Certain conditions in the experimental rig were not exactly comparable to the Egyptian rig and ship. Of course this is all based on the assumption that they could set their sails into the wind as I was able to do. If they did not (or could not) do this, they definitely could not sail these craft more than 15° or so away from the wind.

It is evident that boats with tall rectangular sails set far forward similar to those used by the Egyptians during the first part of the Old Kingdom were never sailed too far away from the path of the wind. They certainly never sailed with the wind on the beam. But these experiments do show that they probably trimmed these tall sails into the wind to a certain degree. The fact that the sail was held by a yard and a boom made this possible. Therefore the lines identified as bowlines could possibly have been used for keeping the leading edge of the sail straight. However, there is never any outboard gear shown for setting these lines up. Actually the lines are usually shown in the hands of the crew well aft of the mast (Fig. 1). There is a more logical explanation for these lines which agrees with the facts: they could be for gathering the sail in. These ships were sailed with the wind essentially aft. The sail was raised with the boom made fast at the base of the mast. When the sail was lowered, it would fill out like a giant square-headed spinnaker. A look at Figs. 1 or 2 will show that as it came down it would either foul over the stemhead, or fall into the water if the wind were coming over the quarter. I believe that it was for pulling in the sail at times like these that the Egyptians used the ropes fixed at the middle edges of their sails. This was obviously a much safer means of handling a large thrashing sail than grabbing the edge of the sail. In fact, it was probably the only practical method for gathering in such a high sail, for a number of men could pull on the ropes and effectively keep the sail close to the mast.

These facts shed some interesting light on the early Egyptian sea voyages, such as that to Syria shown by Sahure's ships. In general the winds at the eastern end of the Mediterranean were northerlies. These would be all right for the return trip. But in going north to Syria such ships must have rowed or paddled (paddles are shown on Sahure's ship), or waited for southerlies which can be picked up along this coast. At any rate, if they used a wind, it had to be blowing pretty much where they wanted to go. And we can assume that they undoubtedly stayed within sight of the shore, so that they would not get caught in a wind which shifted out to open water. In cases where the wind was blowing them away from shore, they undoubtedly let the sail down and rowed (or paddled).

References

(1) C. V. Sølver, 'Egyptian Shipping', *M.M.* Vol. xxii (1936), p. 460.
(2) E. Assmann, 'Die Schiffsbilder', in L. Borchardt, *Das Grabdenkmal des Königs Sahu-re* (Leipzig, 1913), pp. 159–60; A. Köster, *Das Antike Seewesen* (Berlin, 1923), pp. 38–9.
(3) The author is grateful to Mr Charles F. Gladding, Jr, for assisting in some of the tests.

RICHARD LEBARON BOWEN

THE DIARY OF WILLIAM DAVIDSON

My namesake Mr M. S. Anderson mentions this account of the doings of a Russian privateer in the Mediterranean in 1788–9 and asks whether its authenticity has ever been investigated (*M.M.* Vol. 45 (1959), p. 30). A full description of one copy of this 'Pirate's Journal' was given by Mr F. K. Ingram in *The Mariner's Mirror* in 1920 (pp. 332–8). In a subsequent issue (1921, p. 58) it was shown from the log of H.M.S. *Ambuscade*, with which Davidson claimed to have cruised in company, that at least part of the journal must have been pure fiction. Perhaps Mr Anderson can tell us whether the *St Dinnon*, as Davidson calls his ship, was actually included among the Russian privateers in the Mediterranean at this time.

R. C. ANDERSON

SHIPS' NAMES

I can add a few more to Lord Bridport's list (*M.M.* Vol. 45, p. 154). I suppose the best known, at any rate in historical times, was Billy Ruffian for the *Bellerophon* though I never heard the early Dreadnought thus described; the sailors generally called her Belleruffan as far as I can remember.

There is the famous *Hermione* which was known as the 'Ermy One, *Agamemnon* became Eggs and Bacon, or I suspect, more often Aggymemmon or plain Aggy. Frank Bowen used to say that the *Vengeance* was known as The Lord's own and I know that the *Psyche* was either the Pisky or the Sitch. It was, of course, an impossible name for anyone unacquainted with the Classics!

In recent times I have heard that the destroyer *Saintes* is known as the Saintees. I tremble to think what was made of some of the rather unusual names selected for submarines during the last war; I can remember somebody saying that he thought *Urtica* was a bad name as he could not make out why a submarine should be called after nettle-rash!

I believe it is true that, before the war, the ward-room officers of the destroyer *Arrow* used to send a Christmas card every year to Harrow school!

T. D. MANNING

Lord Bridport, in a recent issue, suggested there must be many examples of ships of the R.N. whose nicknames had been bestowed by wits of the lower deck. The old time sailor was adept at names and was already ready with a cognomen. Like children, he found a ready mode of expressing the things he meant although his name for it was more in keeping with his years than from infantile lips. In naming ships, pronunciation was considered and any opportunity for ridicule avoided. In the old Navy, officers and men with their little Latin and less Greek, had difficulty in handling ship names drawn from classical authors. Warship names were not infrequently written on the euphonic principle and caricatured in pronunciation. British sailors took every occasion to Anglicize foreign-sounding names or employed a sort of nautical *idem sonans* in referring to their warships. A final consideration was that names must not be too long as they must fit on the sailor's cap tally.

Goodenough's *The Handy Man Afloat and Ashore*, lists many examples of lower-deck humour to which I have added a few from my files:

Proper name	Sailor's version	Proper name	Sailor's version
Andromache	Andrew Mack	*Immortalite*	Immortalight
Agamemnon	Eggs and Bacon	*Imperieuse*	Imperooze
Ariadne	Hairy Annie	*Latona*	Let Alone
Atalanta	Hat and Lantern	*Minotaur*	Merry Tar or Minny Tar
Agincourt	Gin Palace		
Achilles	Chillus	*Niobe*	Nobby
Andromeda	Andro Meda	*Polyhemus*	Polly Infamous
Audacious	Out Dacious	*Polycrates*	Polly Crates
Amphitrite	'am and Tripe	*Psyche*	Pish
Bellerophon	Billy Ruffin or Ball 'o Rope Yarn	*Queen Elizabeth*	Big Lizzie
		Ramilies	Ram
Bacchante	Black Shant	*Royal William*	Royal Billy
Belliqueux	Billy Squeaks	*Royal Sovereign*	Royal Quid or The Quid
Blenheim	Blen-eem		
Beaulieu	Bowly	*Serapis*	Old Sarah
Belle Poule	Bell Pull	*Sans Pareil*	Sam Perry
Calypso	Cliphooks	*St Jean d'Acre*	Jenny Dacres
Charybdis	Cherrybis	*Temeraire*	Trim yer 'air or Temmy
Circe	Serce		
Dedaigneuse	Dead Nose	*Trafalgar*	Traffy
Daedalus	Deadlies	*Thetis*	Tea Chest
Espigle	Espieegly	*Terpsichore*	Tapsykoar
Euryalus	New Royalist	*Unite*	Uneet
Foudroyant	Fore Dragon	*Ville de Milan*	Wheel 'em along
Genereux	Jenny Rooks	*Ville de Paris*	Willy de Parry
Hermione	Hermy Own or Hermy One	*Venerable*	Archdeacon

H.M.S. *Thetis* was nicknamed Tea Chest, but in this instance there was another reason for the curious name bestowed upon her. In 1823 when an experiment was undertaken to diminish the customary rum ration, the *Thetis* was selected for the experiment and every time her sailors went on shore they were beaten up by sailors from other ships who thought the *Thetis* was responsible for their rum issue being reduced.

Goodenough in his book also recounts the tale of a sailor being rowed out to his new ship riding at anchor. As he passed under the ship's stern, he looked up to read her name. Reading this backwards he spelled out slowly, N-O-G-R-O-G. No grog! she ain't the ship for me.

The names of world seaports were also perverted by the unlearned sailors of centuries ago. Valparaiso was always referred to as Belly Appraiser. Perhaps readers can contribute other examples.

EDGAR K. THOMPSON

RODE DOWN

Nautical dictionaries state 'rode' is a rope for securing an anchor. While the origin of this expression is unknown, itis not a pure Americanism and possibly could be derived from the O.E. *rād-pytt*, draw-well.

The *Dictionary of Americanisms on Historical Principles* gives several early uses of this word: 1634, Wood, N., *English Prospect*: 'They are constrayned to...hale their boats by the sealings, or roades'. 1726, Penhallow, *Indian Wars*: '(They) quit one of their boats by cutting their roads and lashings.' 1884, J. P. Baxter in *Doc. Hist. State of Maine*: 'Boats roads. The word roads is not found in the dictionaries, but is doubtless from the Anglo-Saxon, *rad*, *raed*, ready, preparatory. It is a small rope used in mooring a boat.' 1897, Kipling, *Captains Courageous*: 'Dan...twitched once or twice on the roading and...the anchor drew up at once.' Later on in the same book we find: 'Three boats found their rodings fouled.'

EDGAR K. THOMPSON

LONGITUDE BY VARIATION

In her interesting article 'A Reward for the Longitude' (*M.M.* Vol. 45, p. 66), Professor Taylor is not quite correct in her statement that 'William Whiston and Zachariah Williams came at the end of a long line of deluded men' who sought to find the longitude from an observation for variation. There was at least one later protagonist of the method, Ralph Walker.

Walker was born in 1749, the son of a farmer of Tullibody, Clackmannan, near Stirling. He went to sea, and from 1668 to 1774 was in the Jamaica trade, the first four months before the mast, then as Second Mate and Chief Mate and finally for two years in command. There followed nine more years in command in the American, Baltic and West Indian trades and in 1783 he swallowed the anchor and settled as a planter in Jamaica.

During the next ten years he worked at times on improvements to the machinery used on the sugar plantations and then, in the year 1793, he approached General Adam Williamson, Governor of Jamaica, with ideas for finding the longitude from the variation. General Williamson and Admiral Ford, the Commander-in-Chief, were sufficiently impressed to advise him to return to England and a passage was arranged for him in the *Providence* in which ship Captain Bligh was returning from his successful bread-fruit voyage.

Walker had prepared two large discs to represent the northern and southern hemispheres. The periphery of each formed the equator and each was marked with radial lines for every 10° of longitude and concentric circles for every 10° of latitude. On these discs he plotted the North Magnetic Pole in 71° N., 80° W., and the South Magnetic Pole in 65° S., 130° E.,[1] using the reverse of the procedure about to be described. Data were provided from his own observations in the *Providence* for the North Magnetic Pole and from those of Cook and Bligh for the South.

He next put the two discs edge to edge so that the meridian of Greenwich formed a straight line from one to the other, and drew a straight line connecting the two magnetic poles, this being a magnetic meridian. The angle between this magnetic meridian and the prime meridian gave the

1 Cf. North Magnetic Pole 70° 5′ N., 96° 46′ W., located in 1831; South Magnetic Pole 72° 25′ S., 155° 16′ E. located in 1909.

variation at the point of intersection. To obtain the variation on the prime meridian for other latitudes he drew lines joining each selected position to both magnetic poles, measured the angles between them and the meridian and then assumed that the variation was the sum of these two angles less the variation at the point where the magnetic and true meridians intersected. It is curious to find that the example given in the text of his book differs by half a degree from the value given in a table which he claims to have derived in this manner.

Having all the variations required for points along the Greenwich Meridian the discs were rotated until the meridian of 10° W. formed a straight line, when the entire process was repeated; and so on for each of the meridians drawn on the discs.

From these determinations Walker produced a table (incomplete in his book) for every 2° of latitude and 1° of longitude. To correct for the secular change of variation Walker explained that it would be necessary after a few years to determine anew the positions of the Magnetic Poles and then to construct new discs and new tables. To account for any discrepancy between his tables and any variations observed in known positions, Walker taught that the magnetic meridians were deflected by land masses so that his tables might be inaccurate when near land.

Walker realized the limitations laid on the variation method (assuming that his table had been correct) by the fact that it was difficult to obtain the variation accurately at sea except by the use of amplitudes, so he designed a special compass for the purpose of observing azimuths at any time of the day when the sun was above the horizon.

Walker's scheme was basically that of Edward Wright's Sea Rings about 180 years earlier, in that he fitted a universal sundial to the top of his compass bowl. However, as Captain E. J. Johnson pointed out some half a century later, he made no provision for the vital necessity of ensuring that his instrument was horizontal, while Wright fitted a plumb bob. When the instrument was adjusted and the bowl turned so that the sun threw a point of light on to the centre line of the scale, the lubber's point would indicate true north. The reading of the card opposite the lubber's point at the same instant would indicate the variation and knowing the latitude one could enter the table with this and the variation and so obtain the longitude.

To ensure accuracy, Walker redesigned the compass itself, fitting the needle edgewise to the card instead of flat, as was the usual practice, and putting the pivot point at the intersection of the centre lines of the gimbal axes instead of some way below it, as had been done in Gowin Knight's compasses, then considered to be the best on the market.

Walker presented one of his compasses to James Guthrie, Second Lieutenant of the *Providence*, when they arrived in England in August 1793. He laid the Governor's introduction before the First Lord of the Admiralty and was allowed to send four compasses for trial in the *Invincible*, *Glory*, *Queen* and *Lynx*. He himself attended the trial in the *Invincible*, being on board from 21 February to 13 March 1794.

But it was Murdo Downie, Master of the *Glory*, who really dashed Walker's major hopes. In his report on the trial he pointed out that even if the variation were accurately predicted and even if the compass could be used with accuracy one still would not be able to find the longitude. The compass in a ship is liable to be deflected by the iron in her so that an unknown error would become combined with the variation to give the total error observed. In the *Glory*, differences up to 8° were found between compasses in various parts of the ship. Some writers used to assume that Downie was the first man to discover that a compass needle could be deflected by the iron in a ship. This was not of course the case. The phenomenon had been noted by a number of individuals both in this country and abroad.

It is probable that Walker profited by meeting Downie and in consequence improved his compass. Downie was almost certainly responsible for the needle being placed edgewise for he had advocated this method of fitting in 1792 in his *New Pilot for the East Coast of Scotland*.

Walker submitted his compass and writings to the Board of Longitude. In a long report to the Board, Maskelyne, the Astronomer Royal, repudiated the idea that the variation could be of any use to 'determine the Longitude with sufficient certainty and exactness in the present improved state of Navigation'.[1] Although he was not enthusiastic about Walker's compass, particularly

1 Minutes of Board of Longitude, 6 December 1794.

condemning his edgewise needle as being liable to bend and so cause errors, the Board decided that it should be tested by Mr Wales and, on receiving his report, awarded £200 to Mr Walker.

Although of no use for finding the longitude, Walker's compass excited the admiration of naval officers as an azimuth compass for observing compass errors. It was introduced into the Royal Navy in October 1795 but, on account of its cost, these compasses were only allowed to be issued to ships whose captain or master could produce a certificate of proficiency in its use. In 1815 the certificate was dispensed with and any captain who desired one might demand a Walker's compass in preference to an azimuth compass of the ordinary kind. This order led to a run on the Walker compasses so that other types piled up on the shelves in the stores and in 1819 all issue of Walker compasses was prohibited and all further purchase of them stopped. During the next few years some captains continued to ask for Walker's but were refused until 1828 when their issue was again allowed though not their purchase.

In the late 1840's it was reported that there were still about sixty Walker compasses in store, though long disused. In 1850 the Board of Trade asked if it might have some of them for use when examining candidates for certificates of proficiency and the Admiralty obliged the Board with a dozen. Four years later approval was given for the conversion of thirty-seven to prismatic azimuth compasses, this, with their repair, being £1 an instrument cheaper than buying new. Now all these compasses seem to have disappeared with the exception of one which was the property of Admiral Sir J. T. Duckworth and is now in the National Maritime Museum.

To return to Ralph Walker himself, that inventor had discovered that there were places on the earth's surface where the variation changed so slowly on change of longitude as to be obviously quite valueless. As an afterthought he proposed the use of the 'dip' of the magnetic needle in those localities to help in finding the longitude. He used discs, as he had for determining the variation, and drew on them circles of equal dip which were equal distances apart. He admitted that no one had yet succeeded in producing a dip needle which would give readings of sufficient accuracy at sea, and produced one of his own design which the Astronomer Royal decided was inferior to those already in use.

Although it had been proved to him that his proposals for the longitude were of little value, Walker published a second book on the subject in 1798, but does not on the other hand appear to have wasted any time in vain argument with the Admiralty. Apart from arranging the production of his compasses for supply to the Royal Navy he did little more about the project but devoted his time to other tasks. These included an invention of cylindrical shot, which the Admiralty also turned down after trial, and tide tables for the coast of Europe. In 1796 he laid a plan before the Committee appointed by Parliament to inquire into the best method of increasing the capacity of the Port of London. His proposal for building the basins which are now known as the London Docks met with such approbation that the scheme adopted was modelled on his plan and he was appointed to supervise its execution. The rest of his life was devoted to similar enterprises and he died at Poplar, 19 February 1824.

W. E. MAY

In her fascinating article, 'A Reward for the Longitude'(*M.M.* Vol. 45), Professor Taylor writing of Zachariah Williams on pp. 65–6 mentions Guillaume de Nautonnier.

A copy of the book *La Mécométrie de l'Eymant*, by Guillaume de Nautonnier, Seigneur de Castlefranc en Languedoc, is to be found along with other rare fifteenth- to early eighteenth-century books of maritime interest in Archbishop Marsh's Library, St Patrick's Close, Dublin. Because of its interest I give below the title-page in detail as it reads. Of the rapid refutation of Guillaume de Nautonnier's theories Captain Marguet writes entertainingly on pp. 98–9 of his *Histoire Générale de la Navigation due XVe au XXe Siècle*, concluding: 'It is obvious that the Sieur de Castelfranc was not hard to disprove. All that was necessary was a few observations. This is what Dounod of Bar-le-Duc did trenchantly in 1611, making a scathing attack on de Nautonnier, who had been led by the silence of the learned to hope for immortality for his book, which he was preparing to turn into Latin so as to give it a wider circulation.'

JOHN DE COURCY IRELAND

QUERIES

19. (1959.) Battle of the Falklands. In accounts of the battle of the Falkland Islands in December 1914 there is mention of a large square-rigged ship under full sail appearing fairly close to the British warships during the engagement. Can any reader say what ship this was; her name, rig and nationality?

C. H. WILLIAMS

20. (1959.) The Whiting Shoal. Is it known when the Whiting was first buoyed? One of our most famous Admirals nearly lost his ship on the sand in December 1745, and wrote to the Admiralty suggesting a buoy there. I would be interested to know if anything was done about it.

J. D. SPINNEY

21. (1959.) Fathom. How did this measure of length, used chiefly in measuring cables, cordage and depth of water by soundings get its name? Why is its use limited to things nautical?

B. LOW KINGSTON

22. (1959.) French privateer and American shipping. The American merchant ship *Rodolphe Frederic* was captured in the year 1800 by the French corsaire *La Lance de S. Malo*, Captain Gallais. Does any reader happen to know what became of this ship? Was she sold as a prize or released? Was the article 4 of the French-American convention of any use in preventing her seizure as a lawful prize?

M. M. WITT

23. (1959.) Commissions in the Royal Navy. Can any member tell me why a Commission in the Royal Navy was addressed simply to 'Mr So and so' and ended with the threat 'at your Peril', whereas those for the Army were addressed to 'our Trusty and Well Beloved' and had no threat at the end?

C. M. BLACKMAN

24. (1959.) The *King George*. 'Burthen of about 776 tons and three masts mounted with 26 carriage guns carrying shot of 12 and 6 pounds weight and no swivel guns....' The following are extracts from her letters of Marque: In October 1784 she was authorized 'to seize Pirates, Freebooters and Sea Rovers which do infest the seas of India'.

In September 1793 she was authorized to carry out warlike operations against France, in October 1795 against the United Provinces, and in February 1797 against the King of Spain. Is anything known of the success or otherwise of her various operations? I would be glad to have any information of her warlike and privateering activities, and the pecuniary gains arising therefrom.

C. M. BLACKMAN

25. (1959.) Fiddles. Can any reader suggest how the rack contrivance which is used at sea to prevent things from rolling off the table in bad weather got its name?

B. LOW KINGSTON

26. (1959.) Captain John Keay's Journal. I have, for some years, been trying to locate this journal in order to learn more about the handling and maintenance of clippers, and, in particular, the *Ariel*. After looking through the Lubbock papers in the N.M.M., I made various inquiries in and around Liverpool. Relatives and friends seem to know nothing of the journal, and from Lubbock onward it seems to have disappeared. Surely this masterly first-hand account has not been destroyed? Any suggestions will be welcomed.

F. A. CLAYDON

27. (1959.) Wearing one's flag. One was interested to read in the Note (pp. 331–3, Vol. 44) on the Preamble of the Articles of War, of the admiral who wore his flag in the *Revenge*—an action one has always wished to see being carried out. Surely, a ship *wears* her colours, or the Admiral's flag, or such others as may befit the occasion, but the Admiral *flies* his flag in the ship?

One has always taken the reversal of these terms as being the work of a journalist who wishes to stretch to the uttermost a very limited amount of knowledge; as such was certainly not the case here, could we hear more of the matter?

A. J. L. HUGHES

28. (1959.) It is sometimes pleasing to reflect that only one man in the world is entitled to fly the white ensign on the bonnet of his car. Before it is too late to find out, when did this practice start and who began it?

What flag will the new chief of the Defence Staff use? A Union Jack, which is also used by other Admirals of the Fleet (also generals and governors), would be rather a come down. Will he be left with only the choice of his own heraldic banner? Pleasing, but the habit might be widely copied by the self-important even if checked by a swingeing tax.

JOHN GARLAND

29. (1959). National flags. *The Union flag, its early use.* When the Union flag was first established early in the reign of James I, was it intended that it be worn by all classes of vessels in the two kingdoms, or was it intended for the exclusive use of the king's ships? It appears that by a statute or proclamation of 1673 its use was prohibited to merchant ships and reserved primarily for use as a Naval jack, yet illustrations of English merchantmen of the early Stuart period show the Union flag at the main truck with the Cross of St George alone at various locations: fore-truck, mizzen-truck, flag-staff at the stern, etc. Recent reproductions of seventeenth-century English merchantmen, *Mayflower II*, etc. have used the earlier Union flag in this manner: are these strictly correct?

Squadronal colours, origin of Red Ensign. I understand that the use of red, blue and white ensigns to distinguish units of the three main divisions of the English fleet were adopted in 1625, and that except for a change in the significance of the blue *v.* the white ensign this system remained substantially in effect until 1864. The following questions remain:

In view of the widespread use of the English Red Ensign in the seventeenth century by merchantmen and the like, did its origin in fact antedate the adoption of squadronal colours?

Although the White Ensign was not established as the only ensign of the Royal Navy until 1864, had it in fact become that at a much earlier date?

Although prior to 1864 the Red Ensign was a Naval ensign was it alone the only one of the three Naval ensigns which could be legally used by merchantmen, or rather, until the statutory enactments of 1864, was this merely a matter of custom?

With regard to the last two questions above, I am aware that before 1864 the right of various yachting organizations, the R.Y.S. among others, to use the White Ensign was a matter of some concern.

When squadronal colours were used I understand that flag-officers' ranks were marked by a plain rectangular flag of the appropriate colour worn at the fore, main, or mizzen, depending upon the rank. Is this correct?

Origin of the national flag of Finland. I recall reading that the Finnish national flag and merchant ensign, both having a white field with a blue cross, are adapted from the flag (ensign?) of the former Russian Imperial Yacht Club at St Petersburg. In support of this is cited the fact that the Tsarist naval ensign was a blue saltire (St Andrew's cross) on a white field and a variation of this would be a logical ensign for a yacht club enjoying imperial patronage. Can anyone throw further light on this? Were there in fact other yacht clubs in the then Grand Duchy of Finland which were privileged to use this special ensign and from which, rather than the St Petersburg club, the modern Finnish flag is descended?

The Royal Cork Yacht Club, with its unique traditions derived from the ancient Cork Water Club, have always been a matter of interest to yachting historians. I understand that in addition to its red burgee with a gold harp and crown, it has held the privilege of using the Red Ensign with its crown and harp badge at the centre of the Union canton, rather than on the fly, and that its principal officer, the admiral, has been privileged to display as his flag the Union flag with harp and crown at the centre as on the canton of the Ensign. My questions are, whether, in view

of the political changes which have taken place in Ireland, does this ancient club still call itself 'Royal', and what has been the fate of its burgee with its crown, its special Red Ensign, and its Admiral's Union flag?

WILLIAM R. HOPKINS

30. (1959.) Naval etiquette and shanghaiing. (*a*) What is the origin or reason for the military custom of a junior officer standing or walking to the left of a senior? (*b*) Crimping-Shanghaiing. These two terms are frequently met in old books of the sea. Is there any difference between the two? What is known of their etymology?

J. CLARK NEWSOM

31. (1959.) We have had occasion recently to try to discover all we can about the word 'sound' in its familiar sea connotation of depth-finding. Apart from the suggestion in dictionaries that the derivation is from the low Latin 'subundare' equivalent to the Latin 'sub' and 'unda' (a wave), we have nothing. We have hunted through a great number of technical dictionaries and sea books of various kinds, and would now be pleased if you would put it to your readers kindly to reveal what they know about the origin of the word in its depth significance, and about the length of time it has been used with that meaning.

J. N. CARRUTHERS

ANSWERS

10. (1945.) Unusual fiddle-head ornament. I offer a partial explanation of the curious device depicted in an issue of *Mariner's Mirror* of fourteen years ago. It clearly represents events and objects connected with the Crucifixion; the crowing cock, the Cross, the ladder by which Christ was lowered and the three stars representing the three who met on Calvary. An identical device is utilized even to-day, in wayside shrines in Peru, usually with a long white cloth draped over the arms of the Cross. The writer has seen many of them in all parts of the country. The fiddle-head at Sheerness is no doubt from a Peruvian sailing ship from the time of the flourishing guano trade between Europe and Peru. Any old travel book on South America should give additional details.

EDGAR K. THOMPSON

12. (1958.) Scow—I have no idea where this term might have originated, but on the New Zealand coast in the first three decades of this century the Scow was a flat-bottomed sailer which could load a big deck cargo of timber. Though very square in line, being more or less a square punt with a triangular bow stuck on, these little vessels could look quite well and sail well too. I recall at least one three-master, the *Zingara*, which was used in what was then called the Inter-colonial trade (between New Zealand and Australian ports): but the *Zingara* made some dreadful passages. One I remember, in the early 1920's, was of over 100 days between Melbourne and Hobart, Tasmania. Most scows were two-masters and sailed on the New Zealand coast. They were fitted with centre-boards, not lee-boards, and the rig I remember was generally that of a two-masted schooner.

ALAN VILLIERS

13. (1958.) Origin of the term jury-rig. To derive the word 'jury' in this connexion from the French *durée* seems rather like the notorious *lucus a non lucendo*. The French verb *durer* means 'to last, endure, remain' and that is exactly what a jury-mast, jury-rudder or jury-rig was not expected to do; their purpose was purely temporary. There is also the objection that a change from 'd' to 'j' seems unlikely. If we must have a word beginning with 'd', I would suggest 'duress' as a more promising candidate; but to me the French *jour* seems more likely, though I see no need to go back to Norman-French, when the ordinary French word will do as well. Weekley and—I gather from the Query—the *N.E.D.* call the use of the word 'jury' a 'witticism'. Perhaps someone can explain where the joke lies; it is quite beyond me.

R. C. ANDERSON

16. (1958.) The Viking stone. This is a matter of the so-called Kensington Stone and its inscription, said to tell us about the doings and death of Viking explorers far inland in America.

It is supposed to have been set up by Norsemen as a record of their own doings in heavy fighting with the natives in the course of a journey of exploration.

No one denies that there was a close connexion between Iceland-Greenland and Markland-Vinland in Viking times, but the last trustworthy records of a voyage from Greenland to Markland dates from 1347 and there seems to be neither archaeological nor written evidence for the existence of a later date of intercourse between the Continents or of a Norse settlement in America.

The Kensington Stone was found in 1897 and from the first cautious archaeologists doubted its authenticity. In 1907 H. R. Holand succeeded in deciphering the date 1362 on the stone and believed he had found documentary evidence for the voyage of exploration mentioned in the inscription in a letter written by King Magnus Ericson to Paul Knudson in 1356 with a commission for a voyage to Greenland. He assembled further arguments for the stone's genuineness and published three books on the subject: (1) *The Kensington Rune Stone, A Study in Pre-Columbian History*, 1932. (2) *Westward from Vinland*, 1940. (3) *America, 1355–1364*, 1946.

The following objections to Holand's views were put forward, chiefly by Danish and Norwegian archaeologists: (1) the circumstances of the actual discovery are not satisfactorily explained. (2) The runes are cut in a different way from that usual in the north, by means of two chisels instead of a pointed hammer. (3) The source of eight of the runic letters employed is unknown; the double dots over the letters 'ä' and 'ö' and the rune for 'j' are moreover not known to have been in use at this time, but are taken from letters in the *Cancery Usages* of Lubeck dating from the fifteenth century. (4) The spelling is a complete mixture and both sounds and syntax are irregular; the vocabulary includes words in English forms such as 'from' and 'ded'; the word 'opthagelsefarth' (journey of exploration) is not in the Norse tradition at all.

The search for the forger produced reason to suspect a former Scandinavian investigator and expert on runes, Sven Fogelblad, who died in the neighbourhood of the discovery in 1897 and had been employed during his last years as a tutor in that district.

In 1948 the rune-stone was transferred to the collection of the Smithsonian Institution in Washington. Its authenticity was again upheld by an American, S. N. Hagen, in 1950, but in the following year the Danish runic expert, E. Moltke, raised a whole series of objections, not only against the stone and its inscription, but also against the rest of the indications of the presence of Norsemen in America in the fourteenth century. The controversy in scientific circles as to the genuineness of this stone had thus swung backwards and forwards for half a century.

The philological arguments advanced in the discussion make the assumption of a forgery very probable. F. Holvik even claimed in 1949 to have found the forger's probable source in a collection of documents, but there are even doubts as to the authenticity of that source. A prompt examination of the inscription for traces of wearing of the tools used or a chemical examination of the weathering of the stone might have decided the matter of authenticity, but this can hardly be the case now.

A further argument has not yet been considered, as far as I know. If we study the published descriptions and photographs of the way in which the stone has crumbled, it would seem that the forger tried to make the stone look old, but it is noticeable that none of the crumbling affects the continuity of the lettering; on the contrary in the third and fourth lines the weathering has plainly avoided damaging the inscription; while irregularities in the otherwise remarkably regular writing can only be explained in the same way.

However, the appearance of the letter 'j' must by itself put it beyond question that the stone is a forgery, since this letter is known to have been first introduced for the consonantal 'i' in the sixteenth century. The use of an Arabic date 1362 converted into runes strikes anyone acquainted with medieval sources as thoroughly unusual. From a purely philological standpoint the stone is a unique and acceptable object for study; of almost every one of its variations from the normal there is somewhere an example in one of the northern languages of various centuries; but nowhere is there one for all of them at the same time.

The stone seems to have been by no means the only runic forgery to be seen in America at the turn of the century; there are said to be about thirty others. The dating of the supposed Viking weapons found in America is also most uncertain and hardly any of the finds are recognized as

genuine. At present all our real knowledge of the voyages to Markland and Vinland comes from Icelandic sources.

For those who wish to go further into the problem of the Kensington Stone the following publications may be mentioned:

Andersen, H. and Moltke, E., 'Kensington Stenen, Amerikas Runenstenen', *Danske Studier*, 1949/50.

Genzmer, F., *Germanische Seefahrt und Seegeltung*, 1944.

Hagen, S. N., 'The Kensington Runic Inscription', *Speculo*, July 1950.

Henry, T., 'Das Rätsel des Kensington Steines', *Das Beste aus Readers' Digest*, January 1949 (from *The Saturday Evening Post*).

Krause, W., 'Runen in Amerika', *Germanien*, 1937 (no. 8).

Lechler, J., *Die Entdecker Amerikas vor Kolumbus*, 1939.

Moltke, E., 'Ist der Runenstein von Kensington echt?', *Atlantis*, June 1951.

Zechlin, E., 'Das Problem der vorkolumbischen Entdeckung Amerikas und die Kolumbus-Forschung', *Historische Zeitschrift*, 1935.

PAUL HEINSIUS

This runic stone came to light on the farm of a Swedish immigrant to America, in the Norwegian-Swedish community of Kensington, Minnesota, a few years after the Columbian Exposition of 1892–3 and the consequent publicity given to the 'Vinland voyages'. It purports to tell of an Indian attack on a group of Norwegian and Swedish explorers of 'Vinland'.

Professor Erik Wallgren in *The Kensington Stone: a Mystery Solved* (University of Wisconsin Press, 1958) shows that the runes are suspicious and the characters for numerals preposterous: that the language is nineteenth-century Swedish with Norwegian and English influences; and that there exists a document which was circulated at the time of the 'find', which was represented to be a transcript of the inscription, but which is clearly a rough draft or early version of the rock-carver's text. The stone is thus a hoax like the Cardiff giant or the Piltdown skull.

JOHN LYMAN

The Kensington, Minnesota, Rune Stone, found on 1 January 1899, is not accepted by scholars as being genuine. The runic inscription is regarded as a hoax. I refer Mr Clissold to Professor Erik Wahlgren's book, *The Kensington Stone*, published by the University of Wisconsin Press, for further details.

EDGAR K. THOMPSON

The two Answers given to this Query in the May issue are diametrically opposed in their verdicts. I feel that the views of a Scandinavian expert on runic inscriptions must, as Mr Dolley says, be considered conclusive, but I wish Mr Dolley had explained his own particular objection to the phrase *A V M fräelse af illy*. Taking it as partly abbreviated Latin and partly antiquated Scandinavian I can make a guess at the meaning, but hesitate to commit myself in print.

R. C. ANDERSON

17. (1958.) Drake's tablet. The 'Plate of Brass' which Sir Francis Drake posted to lay claim to Nova Albion for Queen Elizabeth I, 17 June 1579, is now on permanent display at the Bancroft Library, University of California, Berkeley, California.

Its authenticity has been fully established by painstaking metallurgical and chemical tests made by Drs Colin G. Fink and E. P. Polushkin of Columbia University, New York. See *Drake's Plate of Brass Authenticated*, by C. G. Fink and E. P. Polushkin, California Historical Society, San Francisco, California, 1938.

The 'Plate of Brass' is first known to have been found at Drakes Bay about a mile and a half inland from the shore at the junction of two early ranch roads. Its accidental discovery was made by a chauffeur, William Caldiera, who was passing the time waiting for his employer to return from a hunting party. The significance of the plate was not realized, however, and a few weeks later it was thrown away near Greenbrae in the vicinity of upper San Francisco Bay.

About three years later, in the summer of 1936, it was again accidentally discovered by a picknicker, Beryle W. Shinn, who took it home to make a repair to his car, started to clean it, and

then noticed the inscription. On the advice of friends he submitted it to the University of California.

The actual site of Drake's encampment and the *Portus Novae Albionis*, whose locations have for many years been an historical and often controversial mystery, have been recently located on the western shore of the entrance to Drakes Estero, a fair-sized estuary entering Drakes Bay about thirty miles north of San Francisco. The discovery has been made in the course of some seven years of intensive research and field-work by members of the Drake Navigator's Guild, a small group of interested persons who have organized for the particular purpose of locating this important California historical site. A summary of the Guild's work, *Drake's Cove*, by Chester W. Nimitz, Fleet Admiral, U.S.N., is available from the Drake Navigators Guild, Point Reyes Station, California, U.S.A., 50 cents.

It seems highly probable that the 'Plate of Brass' was not originally set up where Caldiera had found it in 1933, but was posted by Drake to a 'great and firme poste' on some prominent point at the mouth of this estuary where it would be seen by ships entering. RAYMOND AKER

I quote from *American Heritage*, issue of April 1959: 'The discovery of Drake's "plate of brass", if this indeed was it, was announced at a meeting of the California Historical Society in April 1937, and a fund was collected by several society members to purchase the plate and present it to the university. Metallurgical examination subsequently confirmed the age of the plate, and one further objection to its authenticity—the fact that it turned up where it did, inland from the sea—was removed when William Caldiera, a chauffeur, came forward to announce that he himself had found it three years earlier and thrown it away near San Quentin when his employer showed no interest. The spot where he claimed originally to have come upon the plate was not far from the bend in the coast that is known—apparently with good reason—as Drake's Bay.'

EDGAR K. THOMPSON

NOTE: The Drake Navigator's Guild, of Point Reyes, California, have reissued in brochure form (from *Pacific Discovery*) an account—with a Foreword by Fleet Admiral Chester W. Nimitz—of how members of the Guild estimated the position where Sir Francis Drake careened *The Golden Hind*, in June and July 1579, on his voyage of circumnavigation. 'Drake's Estero' is an inlet north of Drake's Bay, which again is some 20 miles north-west of San Francisco. The booklet, which describes how the position was discovered and verified, is attractively illustrated. Several other readers are thanked for their interesting letters on this subject, which must now be considered closed—*Editor*.

1. (1959.) THE *MAYFLOWER II*. I think the simplest answer is to refer to Alan Villiers's new book, *Give Me a Ship to Sail*, where he covers the handling of the spritsail and lateen very nicely. As for the third question, there were no blocks on the mizzen yard before the mast.

WILLIAM A. BAKER

7. (1959.) BLACK CAT UNDER A TUB. According to Charles Darwin's statement a cat seems to give favourable winds. In Danish sailors' superstitions the opposite has been the case. From the island of Bornholm in the Baltic I quote the following superstition, recorded in *Jens Kamp*, Danske Folkeminder (Odense, 1877), p. 203: 'When a skipper wants a favourable and good wind he should have no cat onboard. Old sailors often tell about how contrary the wind used to be, when such an animal was found onboard the ship. But if they threw the cat into the sea it would help immediately.' A *black* cat is always thought to bring mischief. HENNING HENNINGSEN

10. (1959.) FRENCH VOLLEY. This question was asked in the *Mariner's Mirror* in 1911 (p. 223), and answered in the next issue (p. 254). Each man of the burial party passed the grave in turn and fired a blank as he did so. The answer referred to events of 1862 and the procedure would not be quite applicable to a burial at sea, but it is probable that the essential feature of firing in succession instead of together would be the same. R. C. ANDERSON

14. (1959.) NAUTICAL TERMS. 'Under Weigh and Under Way.' Both expressions are correct but have two different meanings. The motion of a vessel and the position of the anchor respectively are the criteria for 'under way' and 'under weigh'. These are two distinct phrases frequently confused in use, partly because their pronunciation is the same and partly because often applicable at the same time. When a ship has 'way', she is moving on the surface of the water and is therefore 'under way'. 'Under weigh' means weighing anchor. As soon as the anchor is detached from the sea-bottom, the anchor is weighed or poised between surface and bottom. If a ship has no 'way' on her when she is weighing anchor, she is simply 'under weigh'. But, if a ship has 'way' when weighing anchor, she is both 'under weigh' and 'under way' at the one and the same time. Way is often used for wake. When a ship begins motion she is under way. When motion increases she has fresh way through the water. Hence she may have headway or stern-way, to gather way or lose way.

In Admiralty law, United States courts hold that a vessel 'hove to' is not under way. English courts are to the contrary.

'Quarter Waggoner.' Falconer's Marine Dictionary defines waggoner as a book of charts describing the coast, rocks, etc. Notes and Queries has several observations on this subject and briefly they amount to this: Waggoner might possibly indicate Lucas Jansz Wagenaer of Enchuisen, author of the *Spieghel der Zeeaerdt*, the mirror of navigation, published in Leyden in 1585. A translation was issued in London about 1588. There was also a book known as *The Dutch Waggoner*, or sea mirror, published in Amsterdam in 1689 with a privilege for fifteen years signed by Arent Baron van Waggenaer. Dalrymple's *Charts and Memoirs* (1772) mentions a work called *The English Waggoner*.

Perhaps seamen, from the authors of the navigational books mentioned above, referred to their charts as Wagenars or Waggoners. Quarter probably does not mean quarterdeck but possibly Quarto.

'Lady Rodney.' Admiral George Vernon Jackson in his book, *The Perilous Adventures and Vicissitudes of a Naval Officer 1801–1812*, says Lady Rodney was a well-known negro washerwoman of Barbadoes. Her pseudonym was acquired from a trifling act of gallantry once paid her by a noble sailor whose name and title she thereupon assumed and kept until the day of her death. While this term may have originated in the British West Indies, it was later applied to all native laundresses especially those in Malta.

'Scran Bag.' According to R. Burgess in his *We Joined the Navy*, this was designed to cure sailors of the habit of leaving articles of clothing and personal gear adrift in the living compartments. These items were collected and placed in a large bag or cubby-hole and had to be retrieved by the owners from the Chief Petty Officer. In the R.N., Scran Bag was also applied to any one slovenly dressed or untidy in appearance. In the U.S. Navy, the same type of bag was facetiously called a 'Lucky Bag'. Once a month, the bag was brought to the mainmast. The owners of the articles whose names appeared on the various items would get them back, but would receive several lashes in the bargain for their carelessness in leaving the gear adrift. If the articles were not reclaimed in three months, they were sold to the highest bidder and the monies deposited in the ship's fund. On large ships, a store room is utilized for storage instead of the proverbial Lucky Bag.

EDGAR K. THOMPSON

REVIEWS

TRAFALGAR. By OLIVER WARNER. B. T. Batsford Ltd, 1959. 6 × 9 *inches*; 184 *pages*; 35 *illustrations*. Price 21*s*.

It is always good to read about Nelson, and a book on Trafalgar can hardly be anything else; it is no bad thing either to recall the achievements and renown of our forebears, and as the first of a series designed to that end, Oliver Warner's *Trafalgar* is all the more to be welcomed and approved. The dust-cover, an excellent reproduction of Dighton's painting 'The deck of the *Victory*',

strikes a suitably heroic note from the first, and should tempt the general public to buy. Once bought, the reader's attention is immediately and cunningly beguiled by the opening chapter—'Trafalgar: The News Breaks'—and in the pages which follow Mr Warner is a reliable and agreeable guide across the miles of ocean and in the smoke of battle, down to his sober and timely conclusion on the engagement that: 'Its abiding lesson is in dedication of service.'

This is a story that can not be told too often. The book with its thirty-five illustrations (some unexpected, some unusual, but all interesting), is astonishingly good value, and no one need suppose that its substance owes anything to Mr Warner's 'Portrait of Lord Nelson'; the two works are separate and distinct. But it owes a great deal, as its author acknowledges, to eminent authorities of the past such as Nicolas, Edward Fraser, and Corbett, to name only a few; and of course to Rear-Admiral Taylor. Herein may lie its merit for any who may feel that they 'know it all already'. Your reviewer would never claim as much for himself, but if his own experience is any guide, Mr Warner's book soon sent him to his own shelf to renew acquaintance with some very old friends too long neglected. Corbett's 'Campaign of Trafalgar', once opened, was very hard to put down; and later Edward Fraser's noble tribute to our opponents: 'The Enemy at Trafalgar', had to be re-read almost from cover to cover. For one member of the S.N.R. at least, the old magic was as strong as ever.

J. D. SPINNEY

Medicine and the Navy. Vol. II, 1649–1714. By J. J. Keevil. Edinburgh and London: E. and S. Livingstone Ltd. 1958. 9 × 6 *inches*; 332 *pages including prefix, index, etc.*

Vol. II of this great work is divided into two sections: (1) the Commonwealth and Protectorate period 1652–54; (2) the later Stuart period 1665–1714. There is an excellent index and Chronology and eighteen well-chosen illustrations. Each section has its own very full Bibliography.

The author shows how the Medical Service of the Navy developed under the Commonwealth, the Protectorate and the late Stuarts, into an organization designed, however ineffectually, to meet the needs of seamen serving afloat.

By the beginning of the eighteenth century many surgeons were beginning to take service, more or less continuously, in the Queen's ships and even to take a pride in that service, difficult though it must have been at that time.

Under William III and Anne the need for hospital ships was fully recognized, as was the necessity of sea-surgeons as part of the Navy itself. In these hospital ships was involved something of the organization which was later introduced into Naval hospitals, but they supplied above all a place where sea-surgeons could meet and exchange ideas, and form projects for the advancement of the Service. At this time it should be remembered that there was no medical department of the Navy, nor any head or hierarchy. The Medical Service in so far as it can be said to exist at all, remained something of an abstraction, and, as in the past, depended on the contributions of a number of individuals, few of whom can be identified to-day.

The end of the Civil War on land brought no peace at sea. Prince Rupert and his squadron of seven ships still harried British shipping on the high seas till destroyed by Blake two years later; meantime the British Navy had doubled in size. Political and economic reasons prompted a policy of Naval expansion to secure new markets for English trade.

In 1652 began the First Dutch War with Blake and Van Tromp's action off Dover, the battle of the Kentish Knock; capture of Barbadoes from the Royalists, and the battle of Dungeness; all of which brought hundreds of sick and disabled men, who were put ashore at the nearest port without any provision having been made for their reception, a state of affairs which was to see little improvement in the following fifty years. In most cases the local inhabitants, poor though they might be themselves, did what they could for the sick and wounded, among whom were many suffering from typhus, small-pox and other infectious diseases which spread through the town and countryside; moreover, a large percentage of these poor creatures had no clothes other

than the filthy and verminous rags they wore when seized by the press gangs. In the larger towns the care of sick and wounded men was held to be the responsibility of the mayor, but soon this task proved to be beyond their resources and cases occurred of men dying in the streets without food or shelter. The government could or would do nothing. Its credit was bad and the exchequer was empty. It was no wonder that private persons were disinclined to accept sick men, often suffering from foul and dangerous diseases, into their homes, till they saw some guarantee of being reimbursed for their care and maintenance.

The conditions of life on board ship were frankly horrible and the death-rate appalling even in time of peace. Ships sent on long voyages would expect to lose 50 % of their company from scurvy, dysentery and food poisoning during a short commission abroad. Food poisoning due to eating putrid meat in hot climates, and drinking foul and stinking so-called beer supplied by rascally brewers, was the worst and most fatal disease at sea.

There was corruption everywhere, and so the grim and beastly story goes on. Nothing indeed had changed very much for 200 years.

The Spanish War transferred the centre of activity to the West Indies and permanently introduced into naval life all the medical and other problems of the tropics. Yellow fever and the bloody flux were considered to be beyond man's control. Thousands died. The chief factor affecting health in the tropics was the familiar one of victualling; and some victualling ships were provided; but the old problem remained unsolved, of how to preserve the victuals on long voyages in warm climates.

When Blake sailed with his squadron from Plymouth in September 1654, he found that before he was clear of the Channel a considerable quantity of his beef and pork was putrid and rotten, and, 'some beere that stinketh'. Well, what could you expect for three shillings and sixpence a barrel? Blake, the greatest General at Sea of his time, died on board his flagship on 7 August 1657. Some say of scurvey but more probably of nephritis.

In the long account of these wars, all through the seventeenth and beginning of the eighteenth centuries, horror is piled on horror. It is hard to conceive that human beings could have withstood the hardships of life at sea in those days. Hunger and thirst, dirt and disease, and helpless misery prolonged to a horrible death.

The surgeons no doubt did their best with such knowledge and medicaments as were available to them; but little was still known of the causes of the more fatal diseases such as scurvy, typhus, food poisoning and yellow fever.

Given the smallest opportunity, men deserted in hundreds. When recaptured they were hanged or flogged to death; but they willingly accepted that risk, for nothing could be worse than life on board a man-of-war on such stations as the West Indies. Casualty lists were appalling even in peace time. It took many years before it was officially recognized that disease was far more deadly than the violence of the enemy.

It is not known when yellow fever was first reported in the West Indies. Barbadoes was ravaged by it in 1647. St Kitts lost one-third of its population in 1648, and it was so fatal in San Domingo in 1795 that almost all of France's finest troops sent there in that year were dead before its close.

But grim as the whole of this sad story is, one must admit that its interest never flags. Surgeon-Commander Keevil's book is far more than the story of evolution of medicine at sea. It is history, stark and naked; no naval historian can afford to be without it, and every naval medical officer should have it on his book-shelf.

A. MACDERMOTT

THE JUNKMAN SMILES. By G. R. G. WORCESTER. London: Chatto and Windus. $9 \times 5\frac{3}{4}$ *inches*; 254 *pages*, *illustrations in line and half tone*, *end-paper maps*. Price 21*s*. net.

Mr Worcester's book has a twofold theme. The first is to convey China. The second is to distil the essence of his own adventures, up and down the country, during many years spent in the service of the Chinese Maritime Customs. His book is illustrated both by his own drawings and

by photographs, and it is a blend of beguiling information, wildly improbable legends, humour, and sheer excitement. So far as the drawings are concerned, one of the instances where Mr Worcester's humour is allowed full play is in the end-paper maps, from which the reader learns that he will be invited to explore country ranging from Sun Pan and Kwanhsien in the north-west, across to Chungking, Fuchau, Ichang, Hankow, Nanking and Shanghai, then down to Ningpo, Foochow, Swatow, Hong Kong, Canton, Hanoi and up again by rail to Chungking, with excursions to Formosa and elsewhere. There are indications that he will meet with Buddhists, Bandits, Pigs, Miners, Tea growers, Fishermen..., and so he will, with surprises on almost every page.

Among the junks described are the Foochow Pole Junk, honoured with the frontispiece; the Hangchow Trader; the Hong Kong junk; the Szechuan junk; the Crooked Bow junk of Tzeliutsing; the Crooked Stern junk; the Tsung Ming Cotton junk, all of which are illustrated, but as the author has already published technical monographs and articles on these and other craft, his accounts are intended for the general rather than the specialist reader, though they are never merely superficial.

To one reader, a very high light is the account, in chapter 15, of the salt workings of Tzeliutsing. Text and illustrations are here models of their sort, rendering complicated processes not merely easy to understand, but absorbing. Another vivid section is the description of the way in which the local pilots negotiate the rapids of the Upper Yangste. Some of his friends have been lucky enough to hear Mr Worcester lecture on this subject. It is good that his material is all included in this book, and is thus given permanent form.

The author must be one of the very few men who, having survived bombing at Chungking, and, later, the trials of a Japanese concentration camp, has emerged therefrom not only with an unembittered outlook, but with charity increased, and with an ability to recall his experience in a way which tends rather to stimulate a reader's courage than to depress his spirits. His is a book over which to enthuse, even to bubble. Here is a country and a people at once engaging, fantastic, amoral, teeming, and in these pages, utterly alive. I have not the smallest doubt that it will please people in as many walks of life as the author himself describes so amusingly. There could be no more affectionate account of a land of which most westerners know too little.

OLIVER WARNER.

MODELLING THE CUTTY SARK. By EDWARD BOWNESS. Percival Marshall and Co. Ltd, London. $9\frac{3}{4} \times 7\frac{3}{8}$ *inches*; 58 *pages*, *illustrations in line and half tone*. Price 6*s*.

This, in book form, is the series of articles published in the *Model Engineer* some time ago. Opening with a short but very readable history of this famous ship, it proceeds to give a 'line by line' instruction on building a model of about 18 inches over-all. The purist may criticize some of the details but Mr Bowness—himself a practical ship-modeller and one time editor of *Ships and Ship Models*—does not pretend to compete with the classic two volumes by the late Dr Longridge. This book is for the large number of modellers who have left the tyro stage but have not yet reached the dizzy heights. Here they will find many helpful suggestions accompanied by clear sketches. Modellers will be relieved to note that what simplification there is is rather of detail than the wholesale leaving out which is frequently the bugbear of this type of book. The photographs taken by the author during the reconstruction of the actual ship will also prove of great value to the modeller.

R. J. COLLINS

HERALDIC STANDARDS AND OTHER ENSIGNS. By Lt.-Col. ROBERT GAYRE. Edinburgh: Oliver and Boyd. xix *plus* 125 *pages*; 16 *plates in full colour*; *numerous line drawings in the text; index*. Price 35*s*. net.

Fox-Davies (quoted in the foreword by the Lord Lyon) wrote half a century ago that: 'When it comes to the display of flags the British-born individual usually makes a hash of the whole business.' Though this was aimed chiefly at those who, on occasions of public or private rejoicing, cheerfully

misuse the Sovereign's personal coat of arms or the red, white and blue ensigns, Fox-Davies goes on to discuss the heraldic banner as a means of displaying armorial badges. It is this aspect, long neglected, that forms the subject of Col. Gayer's book. It must be said at once that its appeal is primarily to heraldists, but the connexion with flags and other ensigns worn on ships needs no stressing. The author does much to clear up the existing confusion between pennons, pennoncels, banners, banerolles, banderolles, guidons, standards and gonfannons; tracing the evolution of each, its distinctive form, dimensions and use from what has evidently been considerable research among medieval sources. Among other items may be mentioned the oddly shaped 'schwenkel' banner, with its top edge extended to form a single tail. Some valuable conclusions are put forward, an interesting example of which is the relative command in the field (p. 27) expressed by the ratio: 1 banner = 3 pennons = 360 men. Each pennon commanding about 120 men. The chapter on 'the heraldic household badge' will remind readers of the *M.M.* of the close connexion with badges of H.M. ships derived, as many are, from family arms. Col. Gayre, however, makes no allusion to this, nor, in the section on the streamer, chapter VI, does he mention the commissioning pennant which is the modern version of the medieval oblong standard of arms once borne by the military personage embarked for the purpose of fighting the ship: the intermediate form being the long 'streamer'. There is a criticism on p. 30 of the shape of the modern long rectangular flag used on shore, due, according to the author, to 'the undue influence of the Admiralty', the effect of which is to distort the heraldic charges thereon. In the case of the Royal Standard (by the way, the correct term, as explained on p. 84, is 'Royal Banner') there is a good deal of truth in this contention. But when the author, on p. 87, blames the Tudor heralds for 'the inordinate length' of ships' ensigns and streamers on the score that they (the heralds) had become less interested in the practical value than that of pageantry, your reviewer feels bound to disagree. Surely the boot is on the other foot. Though pageantry was undoubtedly a consideration, the Tudor seaman, hardly an unpractical individual, was not likely to have allowed the heralds to prescribe for him the dimensions of his ensigns as distinct from the charges thereon. What he was primarily concerned with was recognition at sea and at the longest range. There were limits to what the soldier could be expected to carry by way of colours on shore, but no such limitations attached to the display, at masthead or yardarm, of flags, streamers or ensigns. Hence the Earl of Warwick's 40-yard long 'grete stremour' with the badge of the bear and ragged staff emblazoned throughout its length. Another point which might well be discussed in the pages of the *M.M.* is in reference to the coats of arms emblazoned on the sails of medieval ships, as depicted on seals and in certain ancient MSS. Col. Gayre illustrates two of these, viz : the well-known arms of Beauchamp, Earl of Warwick, and those of the Duke of Exeter (plate III, fig. f and p. 31 respectively). But have we any reliable proof that sails were actually thus painted, or were these merely examples of artistic licence? As a Scot (the author is Laird of Nigg) and one who has had the benefit of access to the Lyon Office, this book is written chiefly from the Scottish angle, as is natural. Unfortunately his style is far from lucid. It is strange that it contains no reference to W. G. Perrin's *British Flags* which, though primarily concerned with the flags used at sea, devotes no fewer than 68 out of 204 pages and 3 colour plates to the history of early origins and forms common to both land and sea. Heraldry bristles with controversial points. It is therefore a pleasure to turn to an aspect of this book about which there can scarcely be two opinions. It is a first-class production on which the publishers are to be congratulated. The colour plates are really fine examples of heraldic art and the line drawings equally so. The artist's name is nowhere mentioned, and one therefore concludes that the author himself is responsible. If this is so Col. Gayre deserves high praise. It only remains to add that the print is delightfully bold and clear, the paper of good quality and the layout admirable. Costs of production being what they are I consider the illustrations alone are worth the price asked.

R. D. MERRIMAN

The MARINER'S MIRROR

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